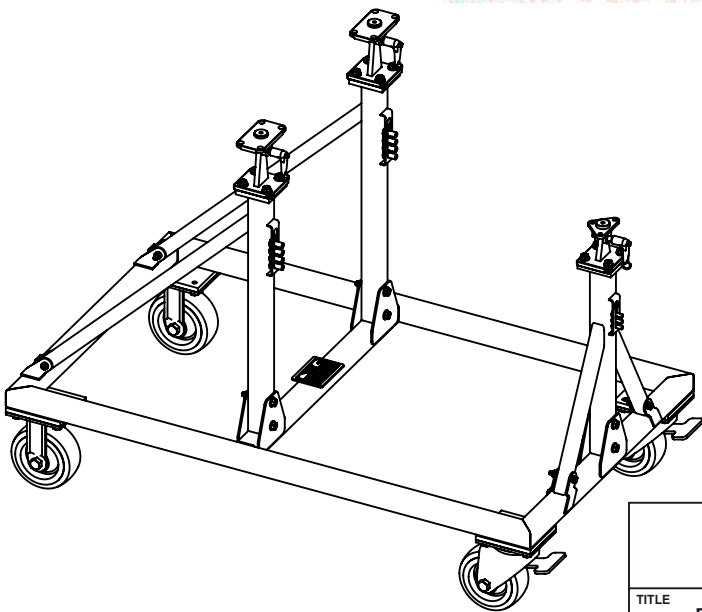


This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.


ASSY QTY	ASSY QTY	ASSY QTY	ASSY QTY	ASSY QTY	ASSY QTY	ASSY QTY	ASSY QTY	B/O	Part #	UNIT QTY	Description	Material	B/O INFORMATION OR SPECIFICATIONS	PG.
							X		-01	1	ENGINE STAND ASSEMBLY			2
					X		1		-03		BOTTOM WELDMENT			3
					2				-05		SIDE TUBE	STEEL SQ TUBE		4
					2				-07		END TUBE	STEEL SQ. TUBE		5
					1				-09		CENTER TUBE	STEEL SQ. TUBE		6
					2				-13		GUSSET PLATE	A36/1018/1020 HR		7
					2				-14		GUSSET PLATE	A36/1018/1020 HR		8
					6				-15		CENTER PLATE	A36/1018/1020 HR		9
					4				-17		WHEEL PLATE	A36/1018/1020 HR		10
					1				-18		PLATE	A36/1018/1020 HR		11
				X			1		-19		FRONT VERT. WELDMENT			12
				1					-21		FRONT VERT. SUPPORT	STEEL SQ. TUBE		13
				2					-23		GUSSET TUBE	STEEL SQ. TUBE		14
					2				-25		GUSSET PLATE	A36/1018/1020 HR		15
					2				-26		GUSSET PLATE	A36/1018/1020 HR		16
				1	1				-27		TOP MOUNT	A36/1018/1020 HR		17
					1				-28		BOLT HOLDER	A36/1018/1020 HR		18
				X			2		-29		REAR VERT. WELDMENT			19
				1					-31		REAR VERT. SUPPORT	STEEL SQ. TUBE		20
				1					-33		BRACE TUBE	STEEL SQ. TUBE		21
				1					-36		BOLT HOLDER	A36/1018/1020 HR		22
		X					1		-37		FRONT ENGINE MOUNT ASSEMBLY			23
	X	1							-39		FRONT WELDMENT			24
		1							-41		BASE	A36/1018/1020 HR		25
		1							-43		FRONT VERT. MOUNT	A36/1018/1020 HR		26
			1						-45		FRONT MOTOR MOUNT	1018/1020 CR		27
	1		1					B/O	-47		BALL LOCK PIN	S.S.	Ø3/8 X 1-1/4 (MCMASTER-CARR #90302A368)	23, 28
	1		1					B/O	-49		LANYARD	COATED STEEL	Ø1/16 X 14 (CARR LANE #CL2C)	23, 28
	2		2					B/O	-51		FERRULE	ALUMINUM	Ø1/16 X 3/8 (MCMASTER-CARR #3896T31)	23, 28
	X						2		-53		REAR ENGINE MOUNT ASSEMBLY			28
X	1								-55		REAR WELDMENT			29
1									-57		BASE	A36/1018/1020 HR		30
1									-59		REAR VERT. MOUNT	A36/1018/1020 HR		31
	1								-61		REAR MOTOR MOUNT	1018/1020 CR		32
							2	B/O	-63		SWIVEL CASTER W/ BRAKES	HARD RUBBER	Ø5 WHEEL (BASSICK #CAS50156YZ-HDR51 (KK)-TLB)	2
							2	B/O	-65		RIGID CASTER WHEEL	HARD RUBBER	Ø5 (BASSICK #CAR50156YZ-HDR51 (KK)	2
							12	B/O	-67		HEX HEAD CAP SCREW	STEEL	5/16-24 X 7/8, GRADE 8 (MCMASTER-CARR #92620A610)	2
							24	B/O	-69		FLAT WASHER	STEEL	Ø5/16 (MCMASTER-CARR #90126A030)	2
							3	B/O	-71		HEX HEAD CAP SCREW	STEEL	1/4-28 X 21/32 AN4-5A	2
							11	B/O	-73		FLAT WASHER	STEEL	Ø1/4 AN960-416	2
							8	B/O	-75		HEX HEAD CAP SCREW	STEEL	3/8-24 X 45/64 AN6-6A	2
							8	B/O	-77		FLAT WASHER	STEEL	Ø3/8 AN960-616	2
							16	B/O	-79		HEX HEAD CAP SCREW	STEEL	3/8-16 X 5/8, GRADE 5 (MCMASTER-CARR #92865A621)	2
							16	B/O	-81		SPLIT LOCK WASHER	STEEL	Ø3/8 (MCMASTER-CARR #91102A760)	2
							6	B/O	-83		HEX HEAD CAP SCREW	STEEL	5/16-18 X 2-1/2, GRADE 5 (MCMASTER-CARR #91247A593)	2
							6	B/O	-85		NYLON LOCK NUT	STEEL	5/16-18, GRADE 5 (MCMASTER-CARR #95615A160)	2
							4	B/O	-89		NYLON LOCK NUTS	STEEL	1/4-20, GRADE 5 (MCMASTER-CARR #95615A120)	2
							4	B/O	-93		HEX HEAD CAP SCREW	STEEL	1/4-20 X 2, GRADE 5 (MCMASTER-CARR #91247A550)	2
								B/O	-95	1	DOUBLE WALL BOX		46 X 28 X 7 (WALTER E. NELSON #578 989-001)	N/S
							4	B/O	-97		DRIVE SCREW	STEEL	#2 X 1/4 (MCMASTER-CARR #90081A077)	2
							1	B/O			PLACARD	ALUMINUM	RB41011	2
ASSY -55	ASSY -53	ASSY -39	ASSY -37	ASSY -29	ASSY -19	ASSY -03	ASSY -01							

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		-11 REAR TUBE ELIMINATED AND ADDED 1 TO QTY., OF -07 NOW END TUBES. REDUCED VERT TUBE HEIGHT BY in., DELETED -35 BY CHANGING -13 AND ADDING -14 (HORIZONTAL GUSSET PLATE TO VERTICAL). CHANGED -25 AND ADDED -26 (HORIZONTAL GUSSET PLATE TO VERTICAL). ADDED .060 RECESSED AREA TO -27 TOP MOUNT AND LENGTHENED VERT. TUBES -21 & -31 BY .060.	4/5/2010	WP	DW
2		CH'D -71 QTY. FROM 4 TO 3. CH'D -93 LENGTH FROM 2 TO 1-3/4 IN BOM. SHORTENED -28 FROM 3.22 TO 2.60 [66.0 mm]. SHORTENED -36 FROM 4.65 TO 3.65 [92.8mm] PER W.P.	8/4/2010	RJC	RW
3		ADDED -25 & -26 TOLERANCE +.000 -.010 TO .250 DIM PER G.E.	5/10/2011	RJC	RW
3A		-19 CH'D DIM WAS 2.502in. [63.55mm] IS 2.5in. [63.6mm]. -29 CH'D DIM WAS 2.50in. [63.5mm] IS 2.5in. [63.5mm].	8/13/2013	RJC	GE
4	15-0044	UPDATED TO NEW DRAFTING STANDARDS. -01 CH'D DIMS WAS 4.425 IS [4.425]. WAS 23.504 IS (23.504). WAS 17.716 IS (17.720). WAS 8.858 IS (8.855). -03 ADDED WELD FIXTURE NOTE. -05 CH'D DIMS WAS 43.16 IS 43.25. WAS 1.50 IS (1.500). WAS 1.50 IS (1.500). WAS .12 IS (.120). -07 CH'D DIMS WAS 25.415 IS 25.50. WAS 1.50 IS (1.500). WAS 1.50 IS (1.500). WAS .12 IS (.120). -09 CH'D DIMS WAS 1.50 IS (1.500). WAS 1.50 IS (1.500). WAS .12 IS (.120). -13 & -14 CH'D DIMS WAS 48° IS (48°). WAS .12 IS (.120). -15 CH'D DIMS WAS Ø.320 IS Ø.344. WAS .120 IS (.120). -17 CH'D DIM WAS .38 IS (.375). -21 CH'D DIMS WAS Ø.323 IS Ø.344. WAS 1.50 IS (1.500). WAS 1.50 IS (1.500). WAS .12 IS (.120). -23 CH'D DIMS WAS 1.00 IS (1.000). WAS 1.00 IS (1.000). WAS .12 IS (.120). -25 & -26 CH'D DIMS WAS .125 IS (.125). WAS R.50 IS (R.500). -27 CH'D DIM WAS .375 IS (.375). -28 CH'D DIMS WAS 2.60 IS 3.00. WAS .775 IS .95. WAS .760 IS .86. WAS Ø.257 IS .27. -29 CH'D DIMS WAS 18.21 IS 18.12. WAS 17.454 IS 17.36. -31 CH'D DIMS WAS Ø.323 IS Ø.344. WAS 1.50 IS (1.500). WAS 1.50 IS (1.500). WAS .12 IS (.120). -33 CH'D DIMS WAS 25.750 IS 25.63. WAS 1.00 IS (1.000). WAS 1.00 IS (1.000). WAS .12 IS (.120). -36 CH'D DIMS WAS 3.65 IS 4.25. WAS Ø.386 IS Ø.40. WAS 1.31 IS 1.47. WAS 1.14 IS 1.30. -39 ADDED DIM Ø.375 THRU ALL. -41 CH'D DIMS WAS .375 S.F. -43 IS .39 S.F. -43. WAS .770 IS .78. WAS 1.539 IS 1.56. WAS .375 IS (.375). ADDED 4X MIN. CORNER RELIEF. -43 CH'D DIM WAS .375 IS (.375) S.F. -41. -55 ADDED DIM Ø.375 THRU ALL. -57 CH'D DIMS WAS .375 IS .39 S.F. -59. WAS .750 IS .76. WAS 1.503 IS 1.52. WAS .375 IS (.375). ADDED 4X MIN. CORNER RELIEF. -59 CH'D DIM WAS .375 IS (.375) S.F. -57. -73 CH'D QTY WAS 12 IS 11. -87 DELETED. -89 CH'D QTY WAS 10 IS 4. -97 ADDED TO BOM. CH'D TOLERANCE ON NON-CRITICAL DIMENSIONS.	2/25/2015	DPD	JAG
5	15-0349	-01 ADDED PLACARD NOTE. -03 CH'D DIMS WAS (2X .51) IS (2X .53). WAS 2X 1.01 IS 2X 1.050 +.015 -.000. WAS (12.75) IS 12.75. WAS (17.72) IS 17.72. WAS (8.86) IS 8.86. WAS (2X 5.88) IS 2X 5.88. -13. -14. -23. -25. -26. -33 CH'D DIM WAS Ø.266 IS Ø.286 +.010 -.000. -15. -21. -31 CH'D DIM WAS 2X Ø.344 IS 2X Ø.364 +.010 -.000. -19 CH'D DIMS WAS 2X 11.15 IS (2X 11.15). WAS 5.87 IS (5.87). WAS 11.75 IS (11.75). ADDED FIXTURE NOTE. -29 CH'D DIMS WAS 18.12 IS (18.12). WAS 17.36 IS (17.36). ADDED FIXTURE NOTE. -45. -57. -61 ADDED ENGRAVE NOTE. -65 REMOVED "W/ BRAKES" FROM DESCRIPTION. REMOVED "-TLB" FROM B/O REF. -97 DELETED. -91 DELETED DASH NUMBER	11/2/2015	DPD	JAG
6	17-0045	-01 DELETED NOTE△. -03 CH'D DIM WAS 2X 5.88 IS 2X .5875. WAS (4X 17.45) IS 4X 17.454. ADDED -99. -13. -14. -15. -17. -25. -26. -27. -28. -36. -41. -43. -57. -59 CH'D MATERIAL WAS 1018/1020 IS A36/1018/1020 HR. -13. -14 CH'D DIM WAS Ø.286 +.010/- .000 IS Ø.300 +.010/- .000 -18 ADDED PART AND DWG. -19 CH'D DIM'S WAS (5.87) IS 5.875. WAS 16.21 IS (16.21). ADDED DIM'S 13.71. 5.875. CH'D WELD CALL OUT WAS FILLET WELD ALL AROUND IS FILLET WELD. -29 CH'D DIM WAS (17.36) IS 17.454. WAS 20.63 IS (20.63). ADDED DIM 18.13. CH'D WELD CALL OUT WAS FILLET WELD ALL AROUND IS FILLET WELD. -33 CH'D DIM WAS 25.63 IS 25.75. -39. -45. -55. -61 CH'D FINISH WAS CAD PLATE YELLOW IS ZINC PLATE SPEC ASTM B633 TYPE I SC2. -39 CH'D TOLERANCE WAS .XXX ±.005 .XX ±.01 IS .XXX ±0.10 .XX ±.03. -41 CH'D DIM WAS .39 S.F. -43 IS .395 +.010/- .000 (S.F. -43). -45. -61 CH'D MATERIAL WAS 1018/1020 IS 1018/1020 CR. -57 CH'D DIM WAS .39 S.F. -59 IS .395 +.010/- .000 (S.F. -59).	2/14/2017	RJC	JAG

SEE ATTACHED DEVIATION



TEO ATTACHED



TITLEENGINE TRANSPORT STAND

DWG NO.RBW7105G00131-3GREV6

MAT'L

HEAT TREAT

FINISH

SPEC

DRAWN BY:PERRITT

CHECKED:DUERFELDT

OPPS APPR:ANDERSON

QA APPR:LINDSAY

APPROVED:GILBERT

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

.XXX ± .005 FRACTIONS ± 1/8

.XX ± .01 ANGLES ±.5°

.X ± .1 SURFACES = 125°

1. BREAK ALL SHARP EDGES .015 x 45° OR .015R

2. DIMENSIONAL LIMITS APPLY AFTER PLATING

3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

USED ON MODEL

AW139

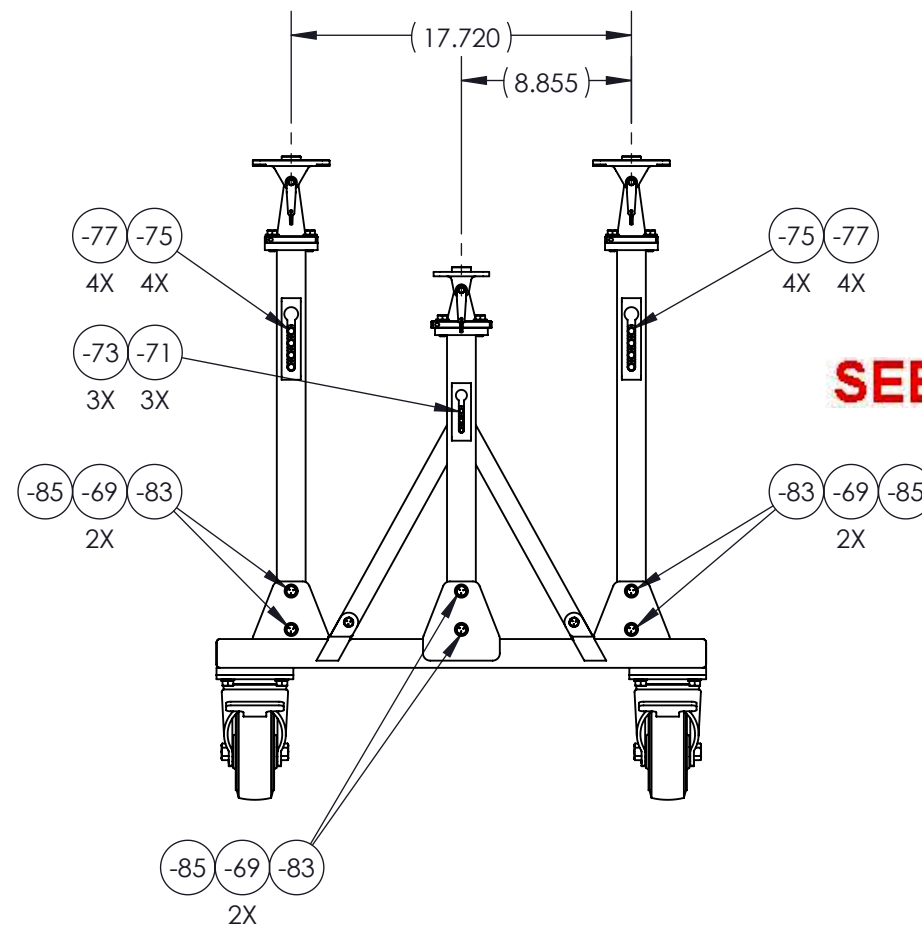
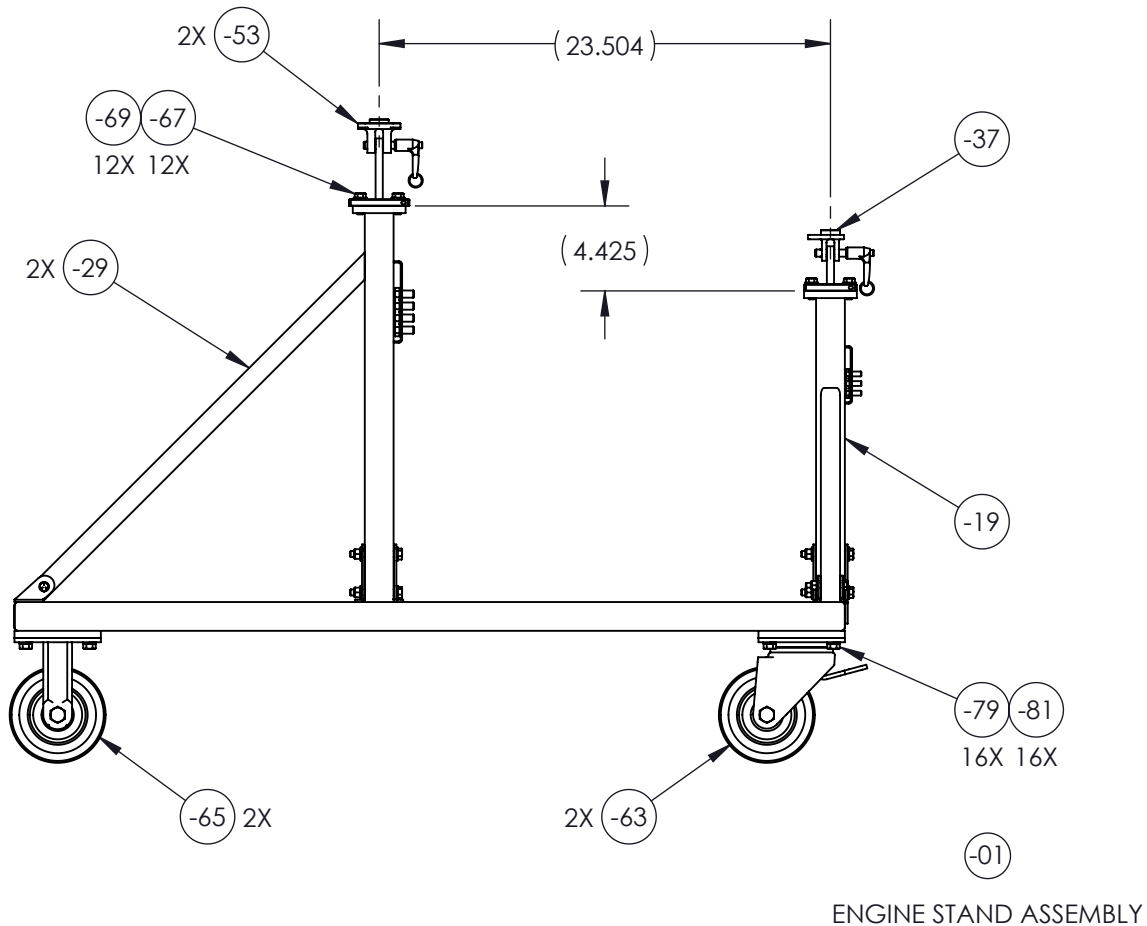
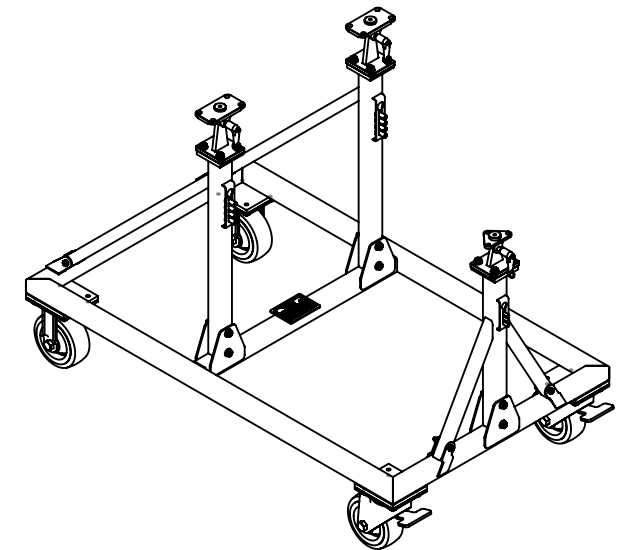
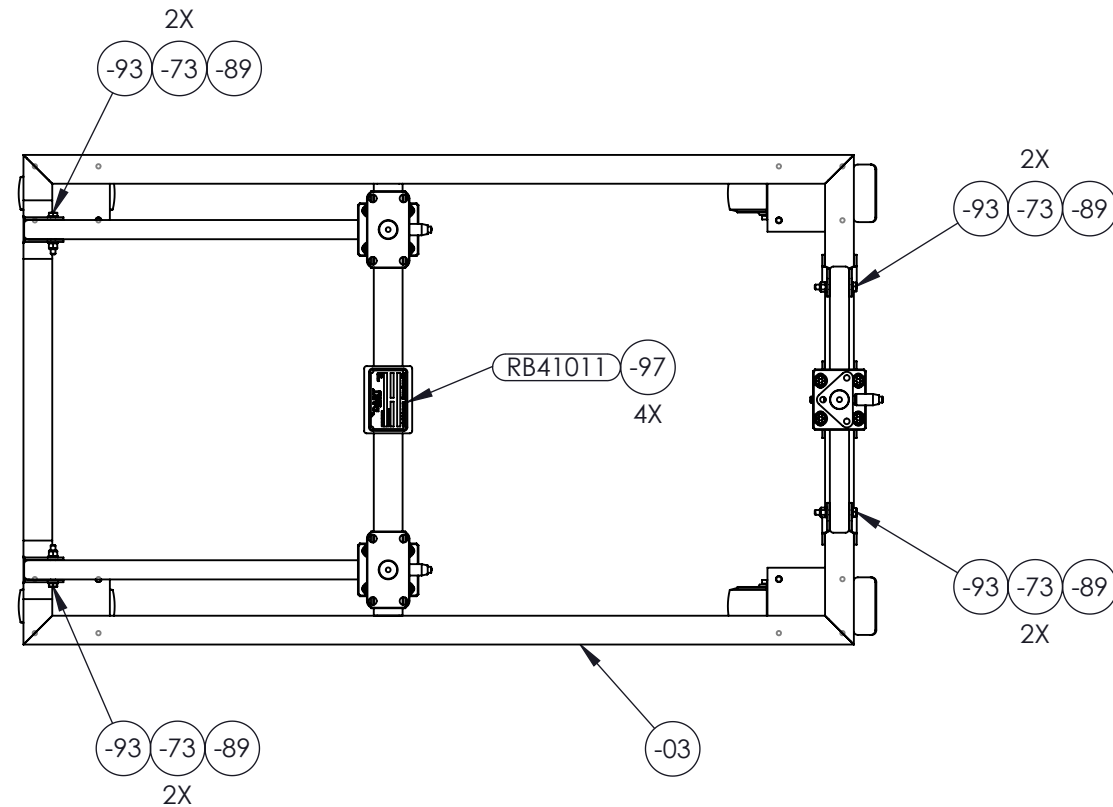
SCALE1:14

DATE2/24/2010


SHEET 1 OF 33

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS						
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED	
4	15-0044	-01 CH'D DIMS WAS 4.425 IS {4.425}, WAS 23.504 IS {23.504}, WAS 17.716 IS {17.720}, WAS 8.858 IS {8.855}.	2/26/2015	DPD	JAG	
5	15-0349	-01 ADDED PLACARD NOTE.	11/2/2015	DPD	JAG	
6	17-0045	-01 DELETED NOTE Δ .	2/14/2017	RJC	JAG	

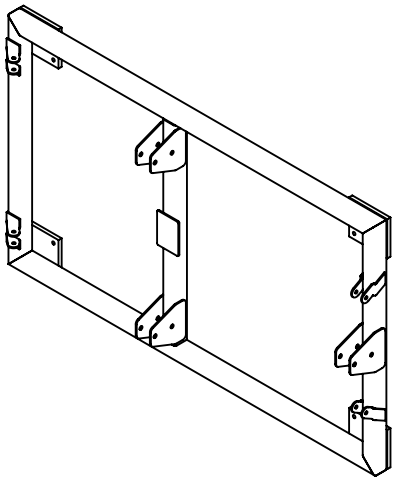
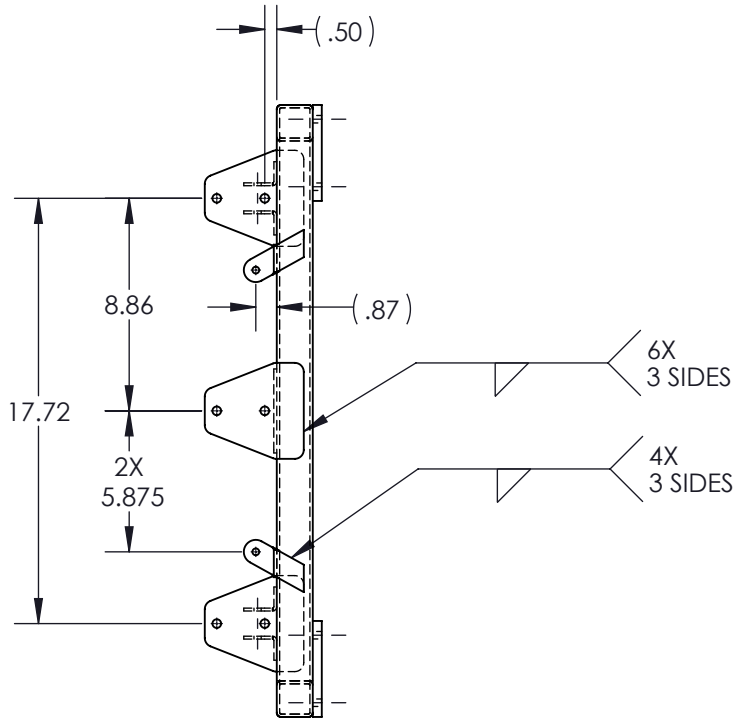
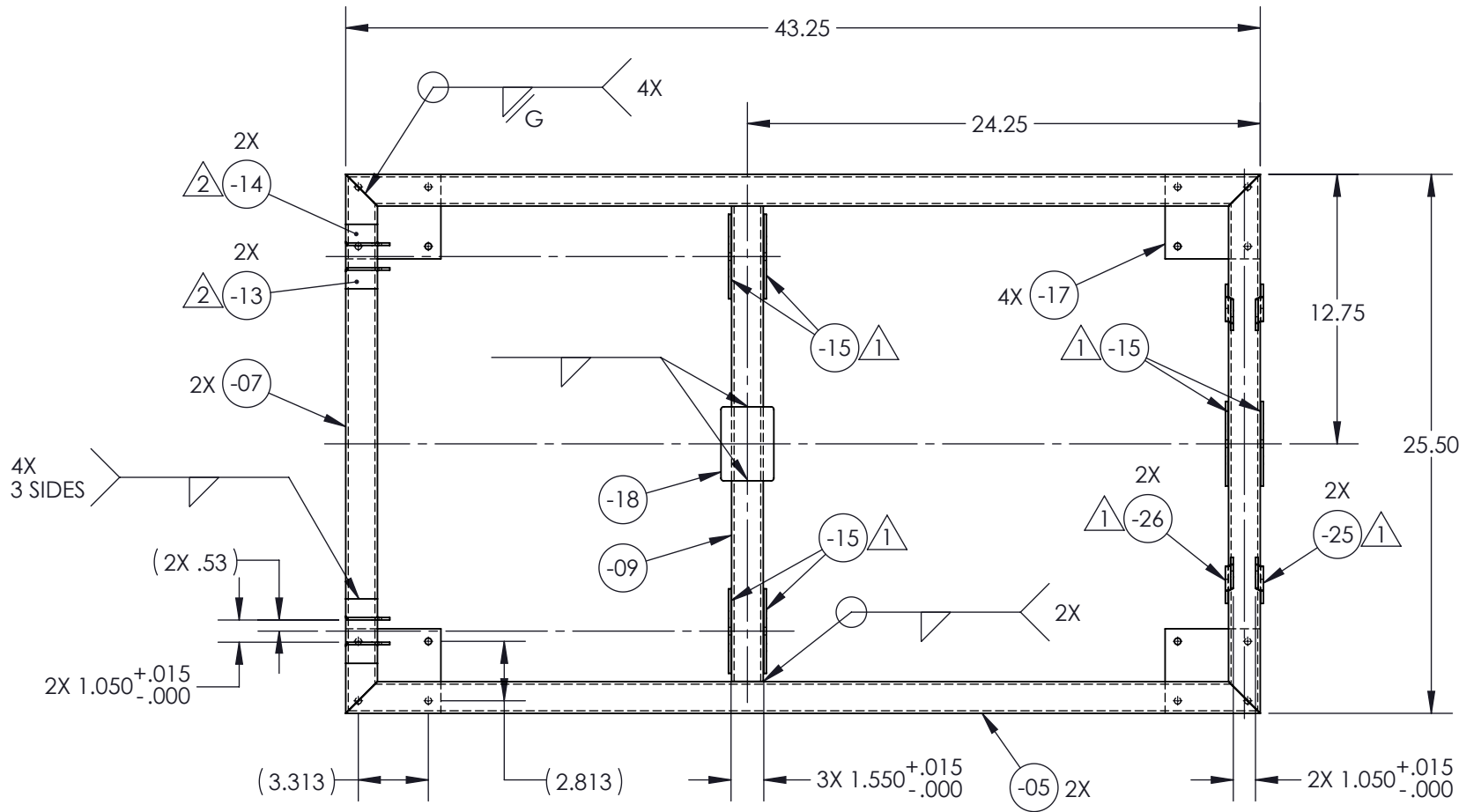


SEE ATTACHED DEVIATION

			
TITLE ENGINE TRANSPORT STAND			
DWG NO. RBW7105G00131-3G-01			REV 6
MAT'L		UNLESS OTHERWISE SPECIFIED	
HEAT TREAT		DIMENSIONS ARE IN INCHES	
FINISH		.XXX ± .005 FRACTIONS ± 1/8	
SPEC		.XX ± .01 ANGLES ± 5°	
		.X ± .1 SURFACES = 125/√	
DRAWN BY: PERRITT		1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	
CHECKED: DUERFELDT		2. DIMENSIONAL LIMITS APPLY AFTER PLATING	
OPPS APPR: ANDERSON		3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009	
QA APPR: LINDSAY		USED ON MODEL	
APPROVED: GILBERT		AW139	
SCALE 1:10	DATE 2/24/2010	SHEET 2 OF 33	

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

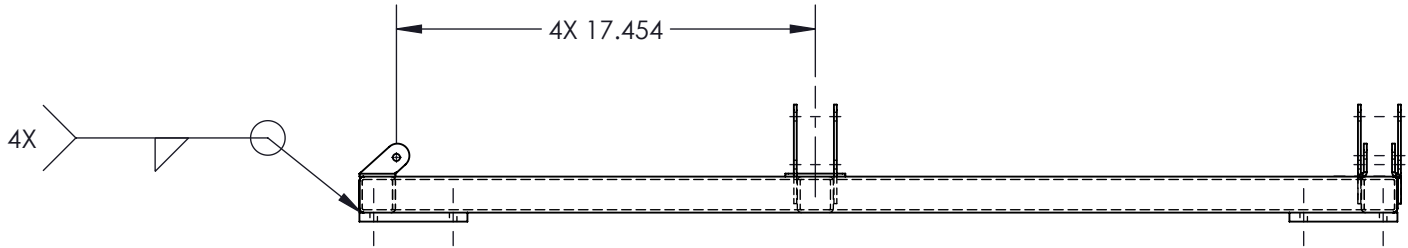
REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
4	15-0044	-03 ADDED WELD FIXTURE NOTE.	2/25/2015	DPD	JAG
5	15-0349	-03 CH'D DIMS WAS (2X .51) IS (2X .53), WAS 2X 1.01 IS 2X 1.050 +.015 -.000, WAS (12.75) IS 12.75, WAS (17.72) IS 17.72, WAS (8.86) IS 8.86, WAS (2X 5.88) IS 2X 5.88.	11/2/2015	DPD	JAG
6	17-0045	-03 CH'D DIM WAS 2X 5.88 IS 2X .5875, WAS (4X 17.45) IS 4X 17.454, ADDED -18.	2/14/2017	RJC	JAG



SEE ATTACHED DEVIATION

- NOTES:
- 1 USE WELD FIXTURE RBW7105G00131-3G-03-F TO LOCATE -15(6), -25(2), & -26(2).
 - 2 USE -29 WELDMENT TO POSITION -13 & -14.

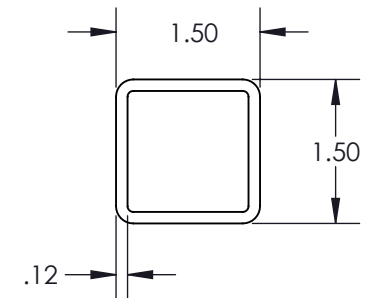
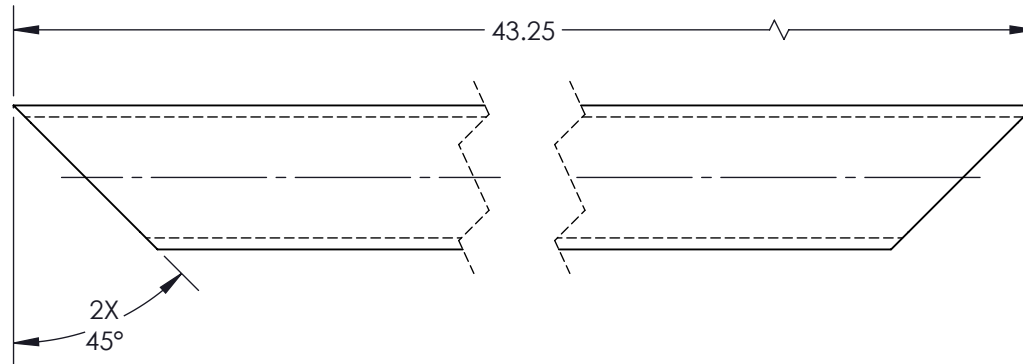
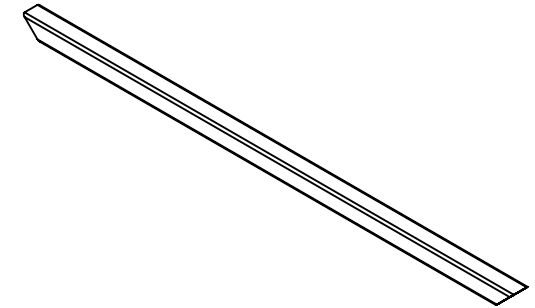
DART AEROSPACE			
TITLE ENGINE TRANSPORT STAND			
DWG NO. RBW7105G00131-3G-03			REV 6
MAT'L HEAT TREAT FINISH POWDER COAT YELLOW SPEC FED #13538		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .010 FRACTIONS ± 1/8 .XX ± .03 ANGLES ± 1° .X ± .1 SURFACES = 125°	
DRAWN BY: PERRITT		1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	
CHECKED: DUERFELDT		2. DIMENSIONAL LIMITS APPLY AFTER PLATING	
OPPS APPR: ANDERSON		3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009	
QA APPR: LINDSAY		USED ON MODEL	
APPROVED: GILBERT		AW139	
SCALE 1:8	DATE 2/24/2010	SHEET 3 OF 33	



-03
BOTTOM WELDMENT

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
4	15-0044	-05 CH'D DIMS WAS 43.16 IS 43.25, WAS 1.50 IS (1.500), WAS 1.50 IS (1.500), WAS .12 IS (.120).	2/25/2015	DPD	JAG



SEE ATTACHED DEVIATION

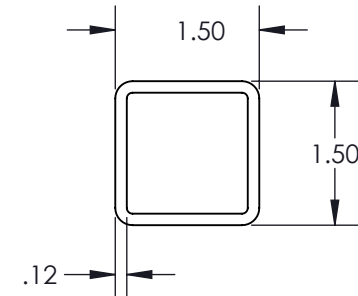
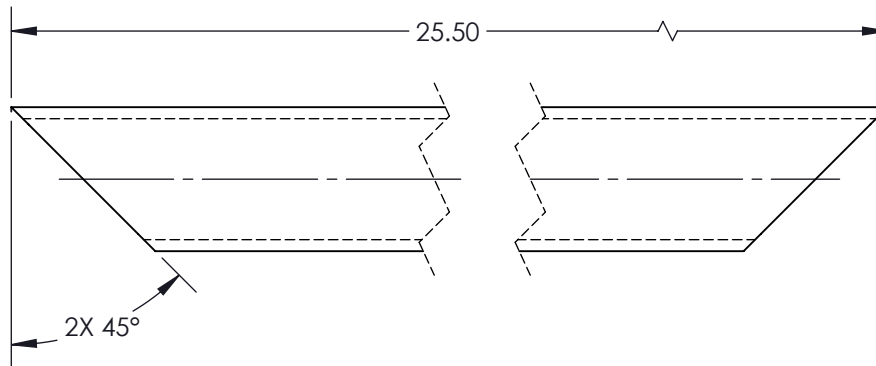
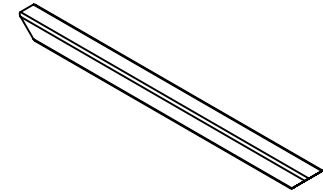
(05)

SIDE TUBE

DART AEROSPACE	
TITLE ENGINE TRANSPORT STAND	
DWG NO. RBW7105G00131-3G-05	REV 6
MAT'L STEEL SQ TUBE	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
HEAT TREAT	.XXX ± .010 FRACTIONS ± 1/8
FINISH SEE -03 WELDMENT	.XX ± .03 ANGLES ± 1°
SPEC	.X ± .1 SURFACES = 125 ✓
DRAWN BY: PERRITT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: DUERFELDT	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: LINDSAY	USED ON MODEL
APPROVED: GILBERT	AW139
SCALE 1:2	DATE 2/24/2010
SHEET 4 OF 33	

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		-11 REAR TUBE ELIMINATED AND ADDED 1 TO QTY. OF -07 NOW END TUBES.	4/5/2010	WP	DW
4	15-0044	-07 CH'D DIMS WAS 25.415 IS 25.50, WAS 1.50 IS (1.500), WAS 1.50 IS (1.500), WAS .12 IS (.120).	2/25/2015	DPD	JAG



SEE ATTACHED DEVIATION

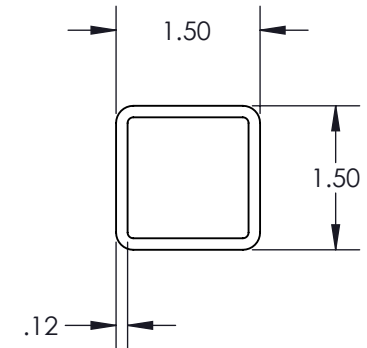
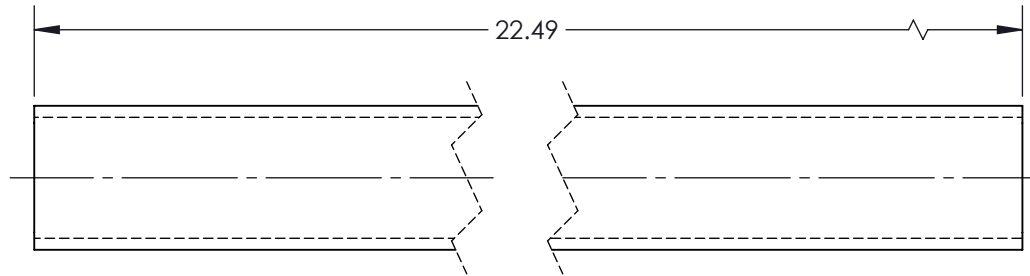
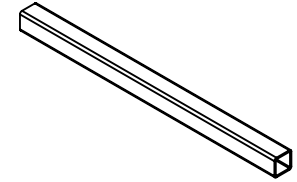
(-07)

END TUBE

DART AEROSPACE	
TITLE ENGINE TRANSPORT STAND	
DWG NO. RBW7105G00131-3G-07	REV. 6
MAT'L STEEL SQ. TUBE	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
HEAT TREAT	.XXX ± .010 FRACTIONS ± 1/8
FINISH SEE -03 WELDMENT	.XX ± .03 ANGLES ± 1°
SPEC	.X ± .1 SURFACES = 125/✓
DRAWN BY: PERRITT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: DUERFELDT	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: LINDSAY	USED ON MODEL
APPROVED: GILBERT	AW139
SCALE 1:2	DATE 2/24/2010
SHEET 5 OF 33	

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
4	15-0044	-09 CH'D DIMS WAS 1.50 IS (1.500), WAS 1.50 IS (1.500), WAS .12 IS (.120).	2/26/2015	DPD	JAG



SEE ATTACHED DEVIATION

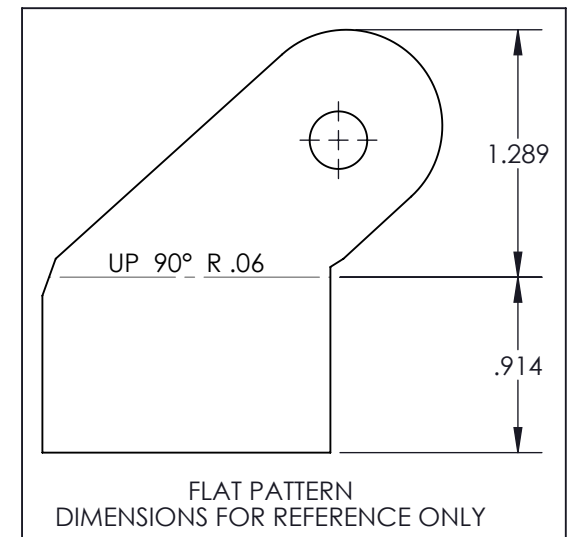
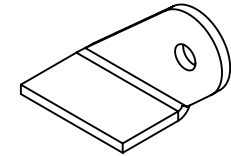
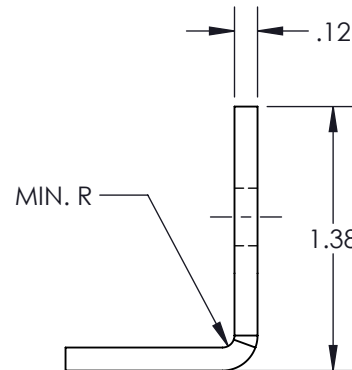
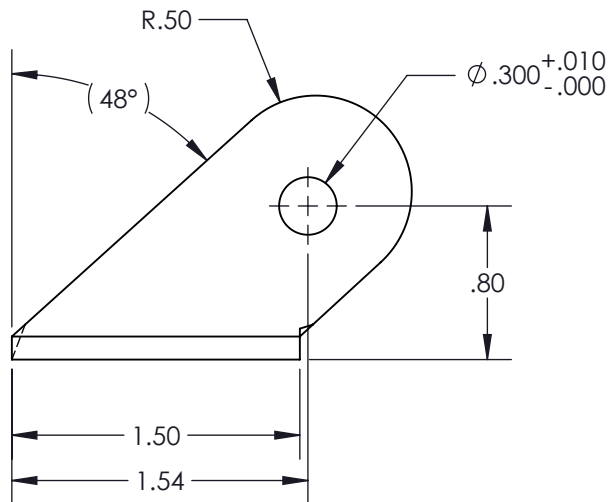
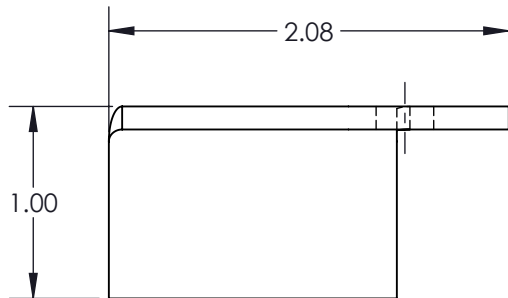
(-09)

CENTER TUBE

DART AEROSPACE	
TITLE ENGINE TRANSPORT STAND	
DWG NO. RBW7105G00131-3G-09	REV 6
MAT'L STEEL SQ. TUBE	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
HEAT TREAT	.XXX ± .010 FRACTIONS ± 1/8
FINISH SEE -03 WELDMENT	.XX ± .03 ANGLES ± 1°
SPEC	.X ± .1 SURFACES = 125° ✓
DRAWN BY: PERRITT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: DUERFELDT	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: LINDSAY	USED ON MODEL
APPROVED: GILBERT	AW139
SCALE 1:2	DATE 2/24/2010
SHEET 6 OF 33	

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		DELETED -35 BY CHANGING -13 AND ADDING -14 (HORIZONTAL GUSSET PLATE TO VERTICLE).	4/5/2010	WP	DW
4	15-0044	-13 CH'D DIMS WAS 48° IS (48°), WAS .12 IS (.120).	2/26/2015	DPD	JAG
5	15-0349	-13 CH'D DIM WAS Ø.266 IS Ø.286 +.010 -.000.	11/2/2015	DPD	JAG
6	17-0045	-13 CH'D DIM WAS Ø.286 +.010/-.000 IS Ø.300 +.010/-.000, CH'D MATERIAL WAS 1018/1020 IS A36/1018/1020 HR.	2/14/2017	RJC	JAG



SEE ATTACHED DEVIATION

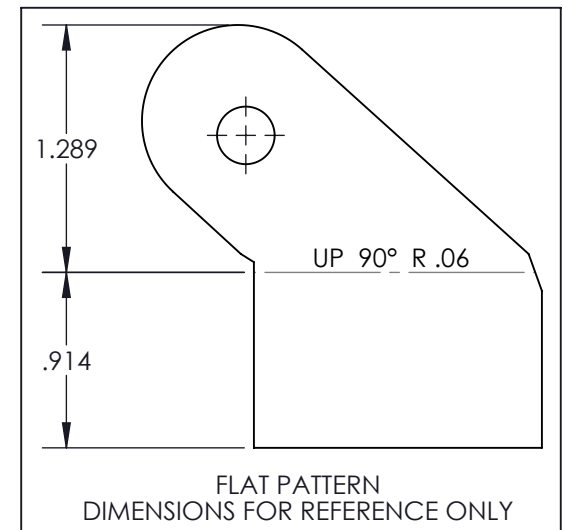
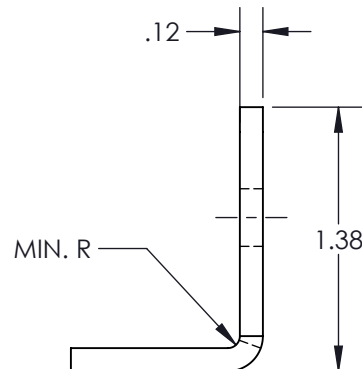
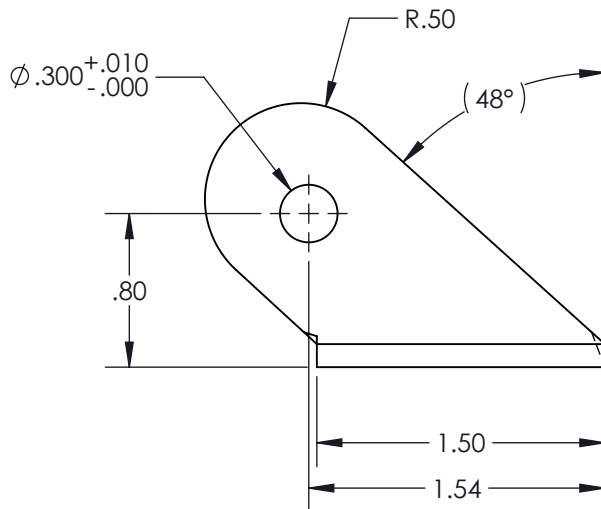
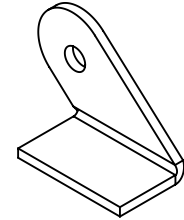
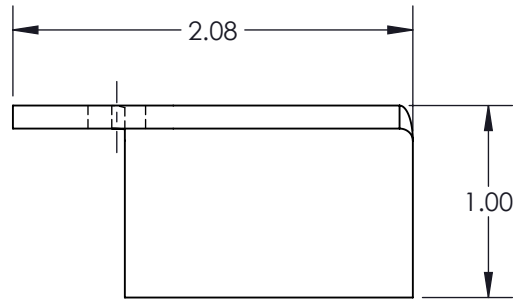
(-13)

GUSSET PLATE

DART AEROSPACE	
TITLE ENGINE TRANSPORT STAND	
DWG NO. RBW7105G00131-3G-13	REV 6
MAT'L A36/1018/1020 HR	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
HEAT TREAT	.XXX ± .010 FRACTIONS ± 1/8
FINISH SEE -03 WELDMENT	.XX ± .03 ANGLES ± 1°
SPEC	.X ± .1 SURFACES = 125/✓
DRAWN BY: PERRITT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: DUERFELDT	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: LINDSAY	USED ON MODEL
APPROVED: GILBERT	AW139
SCALE 1:1	DATE 2/24/2010
SHEET 7 OF 33	

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		DELETED -35 BY CHANGING -13 AND ADDING -14 (HORIZONTAL GUSSET PLATE TO VERTICLE).	4/5/2010	WP	DW
4	15-0044	-14 CH'D DIMS WAS 48° IS (48°), WAS .12 IS (.120).	2/26/2015	DPD	JAG
5	15-0349	-14 CH'D DIM WAS Ø.266 IS Ø.286 +.010 -.000.	11/2/2015	DPD	JAG
6	17-0045	-14 CH'D DIM WAS Ø.286 +.010/-.000 IS Ø.300 +.010/-.000, CH'D MATERIAL WAS 1018/1020 IS A36/1018/1020 HR.	2/14/2017	RJC	JAG



SEE ATTACHED DEVIATION

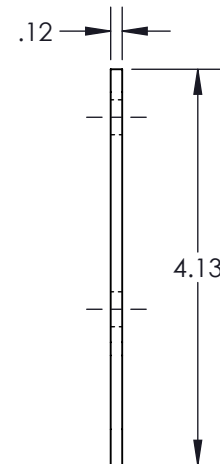
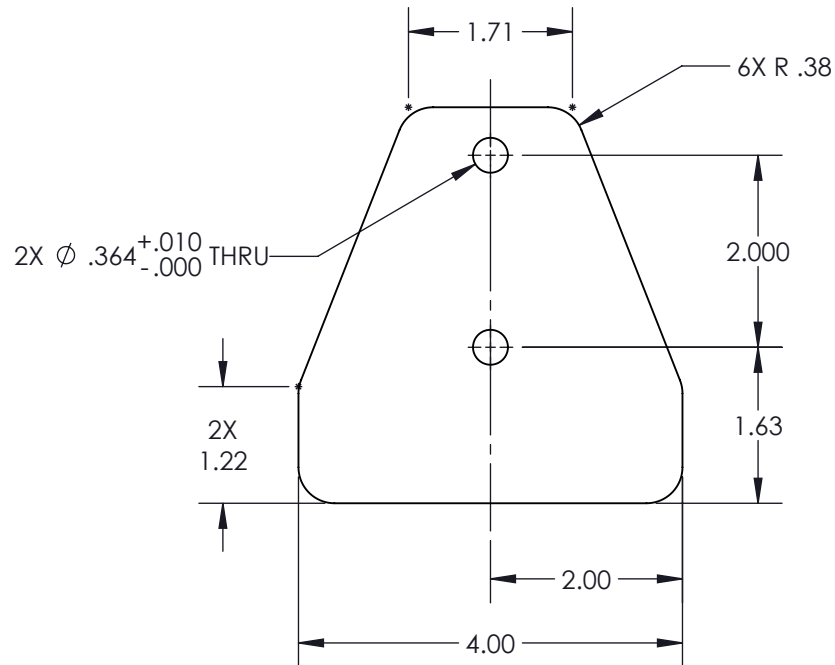
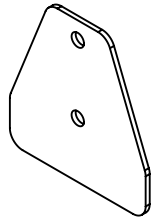
(-14)

GUSSET PLATE

DART AEROSPACE	
TITLE ENGINE TRANSPORT STAND	
DWG NO. RBW7105G00131-3G-14	REV 6
MAT'L A36/1018/1020 HR	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
HEAT TREAT	.XXX ± .010 FRACTIONS ± 1/8
FINISH SEE -03 WELDMENT	.XX ± .03 ANGLES ± 1°
SPEC	.X ± .1 SURFACES = 125/✓
DRAWN BY: PERRITT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: DUERFELDT	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: LINDSAY	USED ON MODEL
APPROVED: GILBERT	AW139
SCALE 1:1	DATE 2/24/2010
SHEET 8 OF 33	

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
4	15-0044	-15 CH'D DIMS WAS Ø.320 IS Ø.344, WAS .120 IS (.120).	2/26/2015	DPD	JAG
5	15-0349	-15 CH'D DIM WAS 2X Ø.344 IS 2X Ø.364 +.010 -.000.	11/2/2015	DPD	JAG
6	17-0045	-15 CH'D MATERIAL WAS 1018/1020 IS A36/1018/1020 HR.	2/14/2017	RJC	JAG



SEE ATTACHED DEVIATION

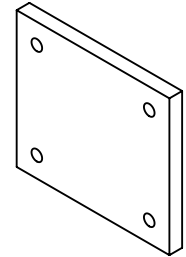
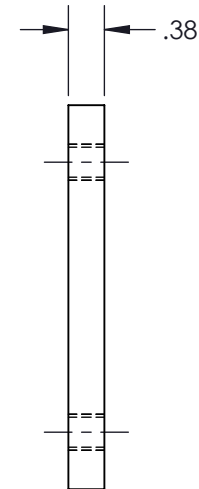
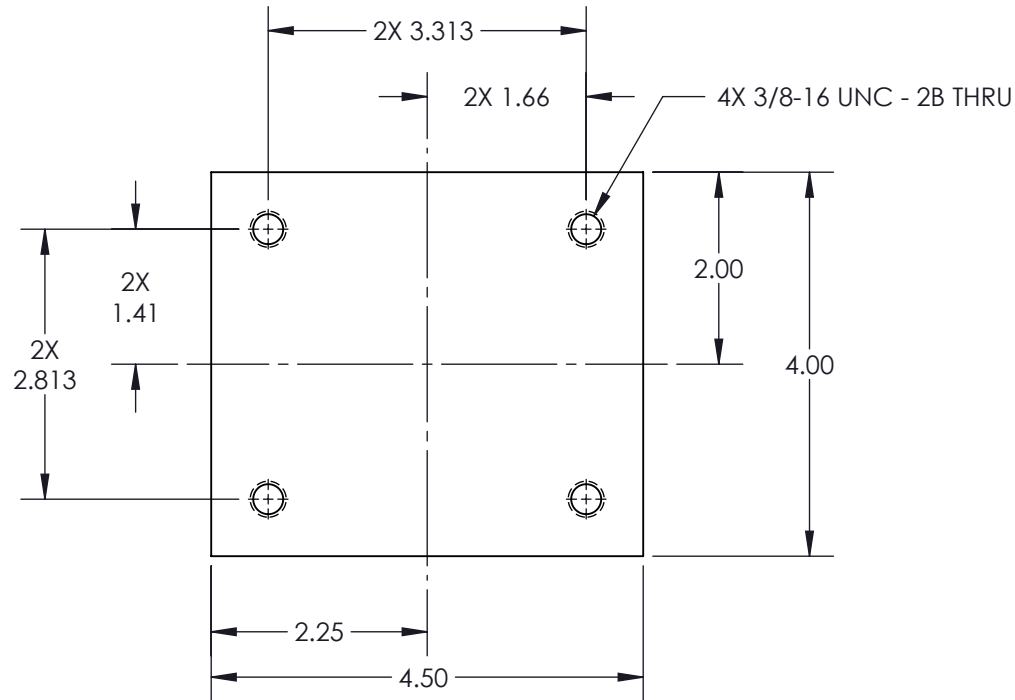
(15)

CENTER PLATE

DART AEROSPACE	
TITLE ENGINE TRANSPORT STAND	
DWG NO. RBW7105G00131-3G-15	REV 6
MAT'L A36/1018/1020 HR	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
HEAT TREAT SEE -03 WELDMENT	.XXX ± .010 FRACTIONS ± 1/8
FINISH SEE -03 WELDMENT	.XX ± .03 ANGLES ± 1°
SPEC	.X ± .1 SURFACES = 125° ✓
DRAWN BY: PERRITT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: DUERFELDT	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: LINDSAY	USED ON MODEL
APPROVED: GILBERT	AW139
SCALE 1:2	DATE 2/24/2010
SHEET 9 OF 33	

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
4	15-0044	-17 CH'D DIM WAS .38 IS (.375).	2/26/2015	DPD	JAG
6	17-0045	-17 CH'D MATERIAL WAS 1018/1020 IS A36/1018/1020 HR.	2/14/2017	RJC	JAG



SEE ATTACHED DEVIATION

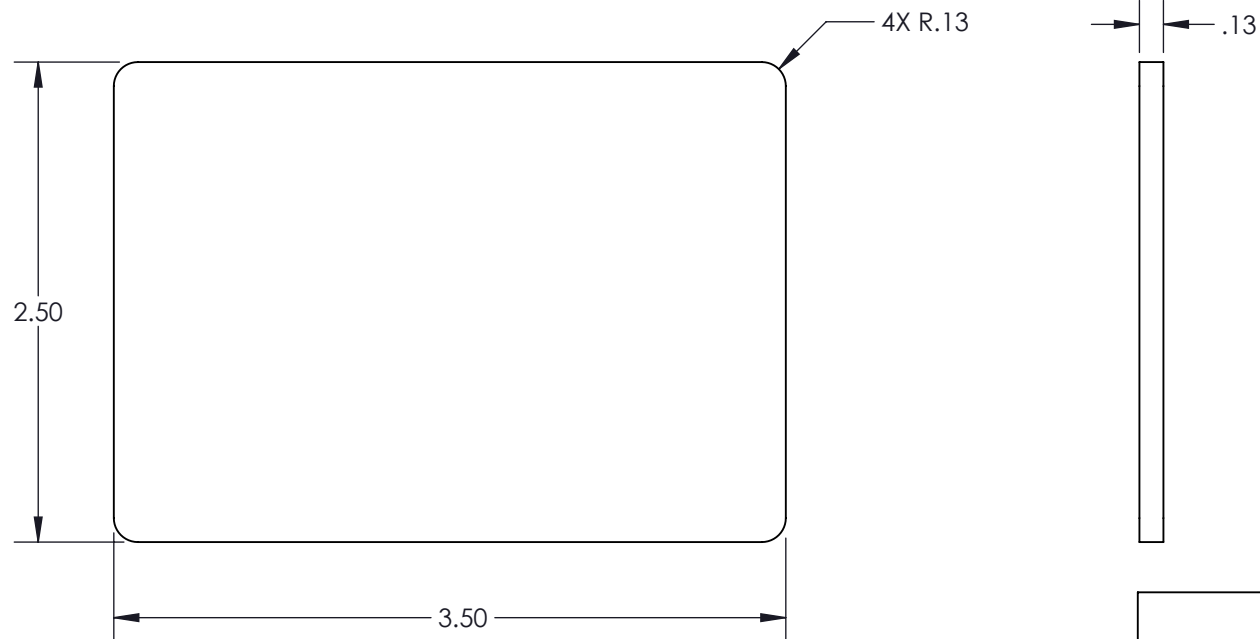
(-17)

WHEEL PLATE

DART AEROSPACE	
TITLE ENGINE TRANSPORT STAND	
DWG NO. RBW7105G00131-3G-17	REV 6
MAT'L A36/1018/1020 HR	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
HEAT TREAT SEE -03 WELDMENT	.XXX ± .010 FRACTIONS ± 1/8
FINISH SEE -03 WELDMENT	.XX ± .03 ANGLES ± 1°
SPEC	.X ± .1 SURFACES = 125° ✓
DRAWN BY: PERRITT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: DUERFELDT	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: LINDSAY	USED ON MODEL
APPROVED: GILBERT	AW139
SCALE 1:2	DATE 2/24/2010
SHEET 10 OF 33	

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
6	17-0045	-18 ADDED PART AND DWG.	2/14/2017	RJC	JAG



SEE ATTACHED DEVIATION

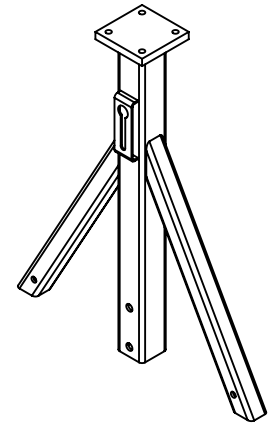
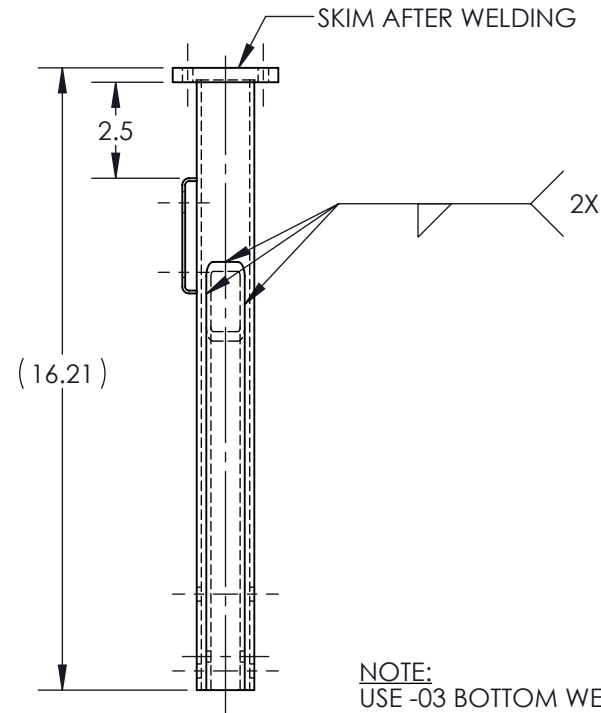
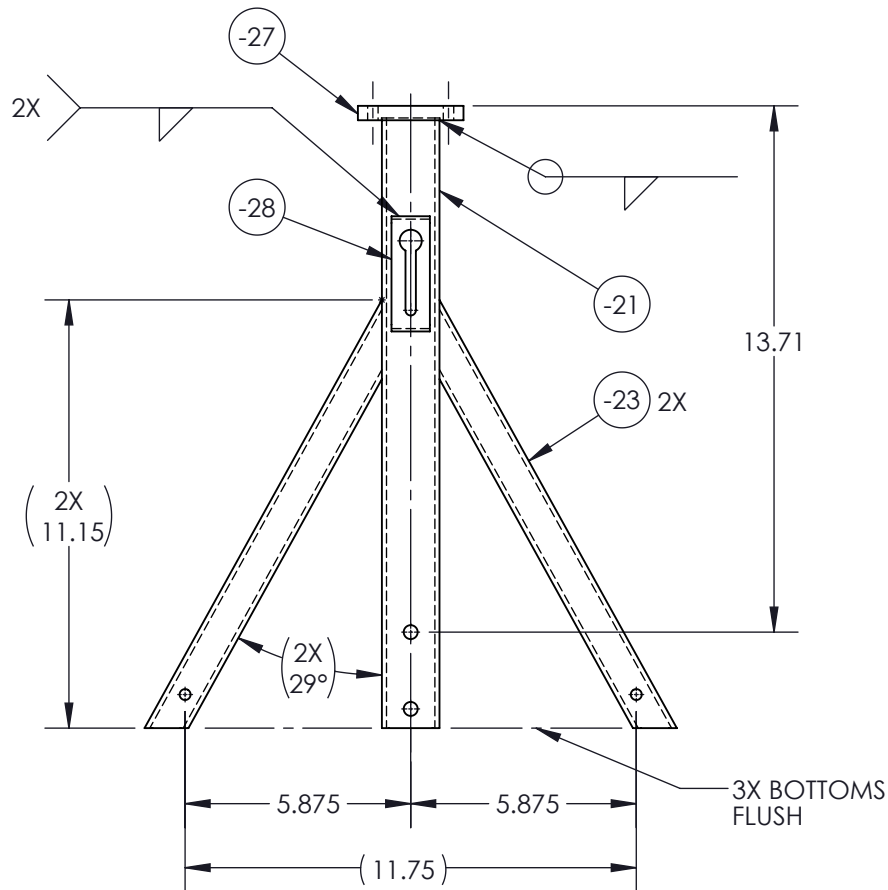
(-18)

PLATE

DART AEROSPACE	
TITLE ENGINE TRANSPORT STAND	
DWG NO. RBW7105G00131-3G-18	REV 6
MAT'L A36/1018/1020 HR	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
HEAT TREAT	.XXX ± .005 FRACTIONS ± 1/8
FINISH SEE -03	.XX ± .01 ANGLES ±.5°
	.X ± .1 SURFACES = 125°
SPEC	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
DRAWN BY: CLOUGH	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
CHECKED: DUERFELDT	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
OPPS APPR: ANDERSON	USED ON MODEL
QA APPR: LINDSAY	AW139
APPROVED: GILBERT	
SCALE 1:1	DATE 2/14/2017
SHEET 11 OF 33	

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
5	15-0349	-19 CH'D DIMS WAS 2X 11.15 IS (2X 11.15), WAS 5.87 IS (5.87), WAS 11.75 IS (11.75). ADDED FIXTURE NOTE.	11/2/2015	DPD	JAG
6	17-0045	-19 CH'D DIM'S WAS (5.87) IS 5.875, WAS 16.21 IS (16.21). ADDED DIM'S 13.71, 5.875. CH'D WELD CALL OUT WAS FILLET WELD ALL AROUND IS FILLET WELD.	2/14/2017	RJC	JAG



NOTE:
USE -03 BOTTOM WELDMENT AS FIXTURE FOR WELDING.

SEE ATTACHED DEVIATION

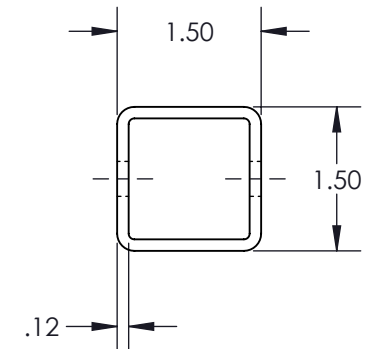
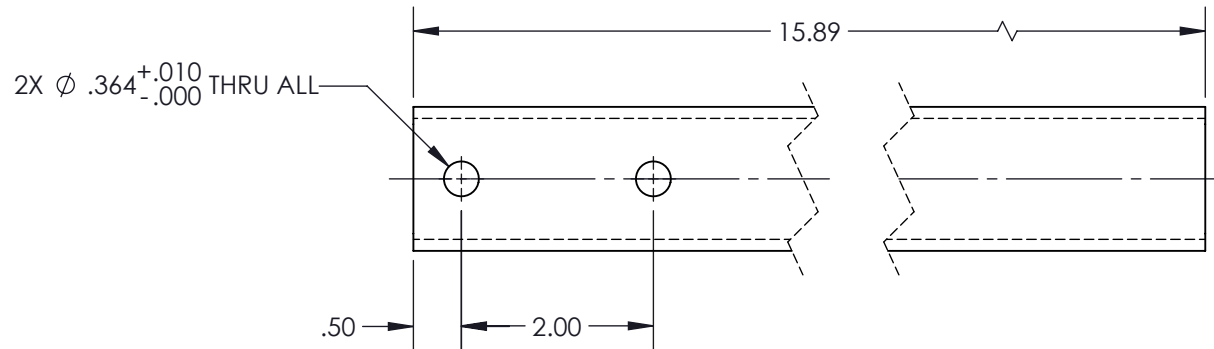
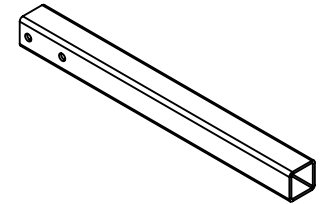
-19

FRONT VERT. WELDMENT

DART AEROSPACE	
TITLE ENGINE TRANSPORT STAND	
DWG NO. RBW7105G00131-3G-19	REV 6
MAT'L HEAT TREAT FINISH POWDER COAT YELLOW SPEC FED #13538	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .010 FRACTIONS ± 1/8 .XX ± .03 ANGLES ± 1° .X ± .1 SURFACES = 125°
DRAWN BY: PERRITT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: DUERFELDT	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: LINDSAY	USED ON MODEL
APPROVED: GILBERT	AW139
SCALE 1:5	DATE 2/24/2010
SHEET 12 OF 33	

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		ADDED .060 RECESSED AREA TO -27 TOP MOUNT AND LENGTHENED VERT. TUBES -21 & -31 BY .060.	4/5/2010	WP	DW
4	15-0044	-21 CH'D DIMS WAS Ø.323 IS Ø.344, WAS 1.50 IS (1.500), WAS 1.50 IS (1.500), WAS .12 IS (.120).	2/26/2015	DPD	JAG
5	15-0349	-21 CHD DIM WAS 2X Ø.344 IS 2X Ø.364 +.010 -.000.	11/2/2015	DPD	JAG



SEE ATTACHED DEVIATION

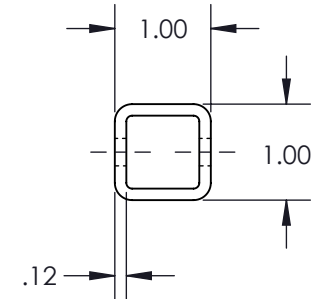
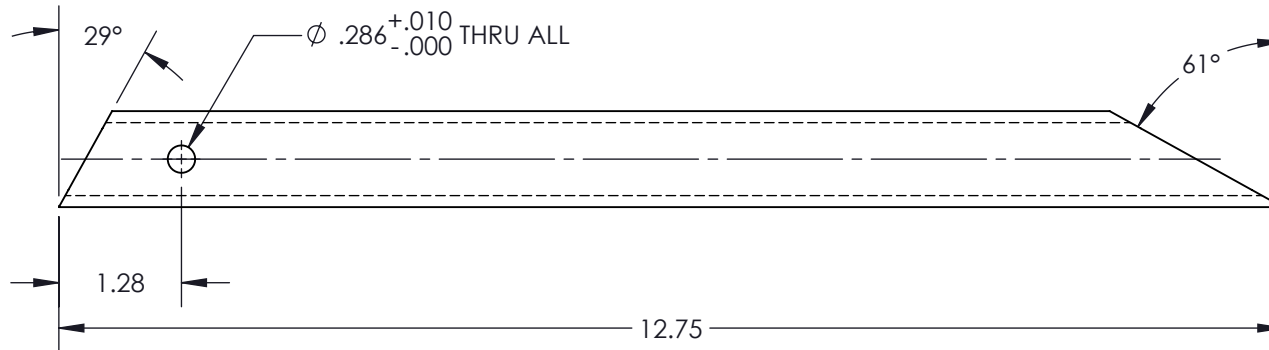
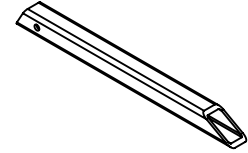
(-21)

FRONT VERT. SUPPORT

DART AEROSPACE	
TITLE ENGINE TRANSPORT STAND	
DWG NO. RBW7105G00131-3G-21	REV. 6
MAT'L STEEL SQ. TUBE	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
HEAT TREAT	.XXX ± .010 FRACTIONS ± 1/8
FINISH SEE -19 WELDMENT	.XX ± .03 ANGLES ± 1°
SPEC	.X ± .1 SURFACES = 125/✓
DRAWN BY: PERRITT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: DUERFELDT	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: LINDSAY	USED ON MODEL
APPROVED: GILBERT	AW139
SCALE 1:2	DATE 2/24/2010
SHEET 13 OF 33	

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
4	15-0044	-23 CH'D DIMS WAS 1.00 IS (1.000), WAS 1.00 IS (1.000), WAS .12 IS (.120).	2/26/2015	DPD	JAG
5	15-0349	-23 CH'D DIM WAS Ø.266 IS .286 +.010 -.000.	11/2/2015	DPD	JAG



SEE ATTACHED DEVIATION

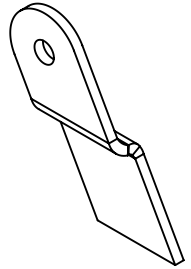
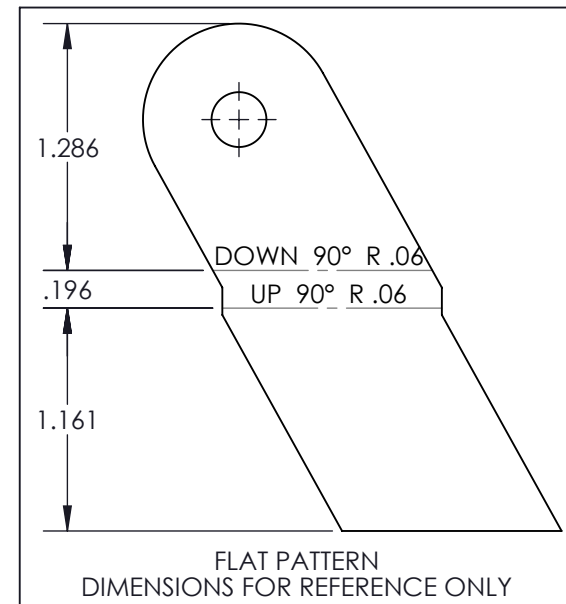
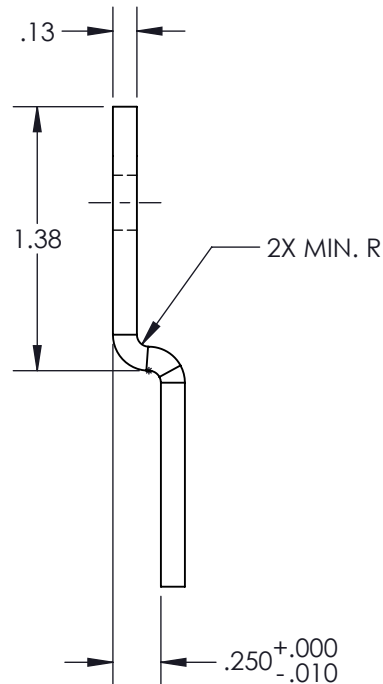
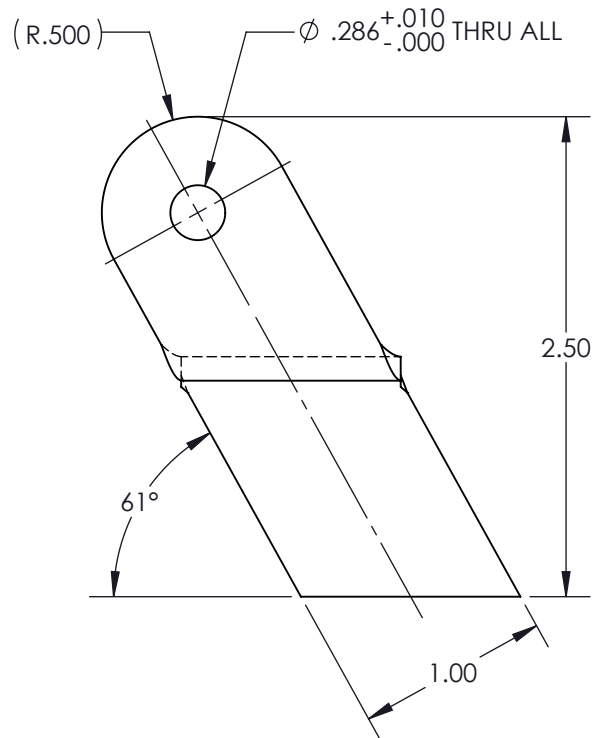
(-23)

GUSSET TUBE

DART AEROSPACE	
TITLE ENGINE TRANSPORT STAND	
DWG NO. RBW7105G00131-3G-23	REV. 6
MAT'L STEEL SQ. TUBE	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
HEAT TREAT	.XXX ± .010 FRACTIONS ± 1/8
FINISH SEE -19 WELDMENT	.XX ± .03 ANGLES ± 1°
SPEC	.X ± .1 SURFACES = 125/✓
DRAWN BY: PERRITT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: DUERFELDT	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: LINDSAY	USED ON MODEL
APPROVED: GILBERT	AW139
SCALE 1:2	DATE 2/24/2010
SHEET 14 OF 33	

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		CHANGED -25 AND ADDED -26 (HORIZONTAL GUSSET PLATE TO VERTICAL).	4/5/2010	WP	DW
3		ADDED -25 TOLERANCE +.000 -.010 TO .250 DIM PER G.E.	5/10/2011	RJC	RW
4	15-0044	-25 CH'D DIMS WAS .125 IS (.125), WAS R.50 IS (R.500).	2/26/2015	DPD	JAG
5	15-0349	-25 CH'D DIM WAS Ø.266 IS Ø.286 +.010 -.000.	11/2/2015	DPD	JAG
6	17-0045	-25 CH'D MATERIAL WAS 1018/1020 IS A36/1018/1020 HR.	2/14/2017	RJC	JAG



SEE ATTACHED DEVIATION

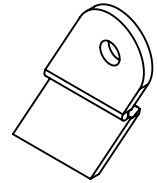
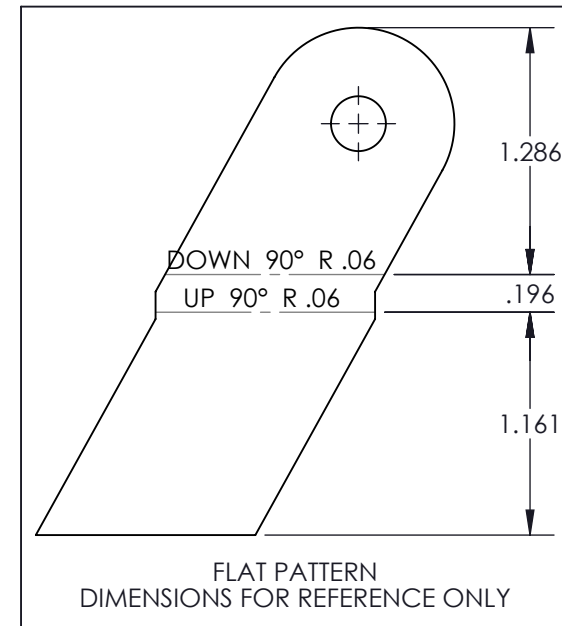
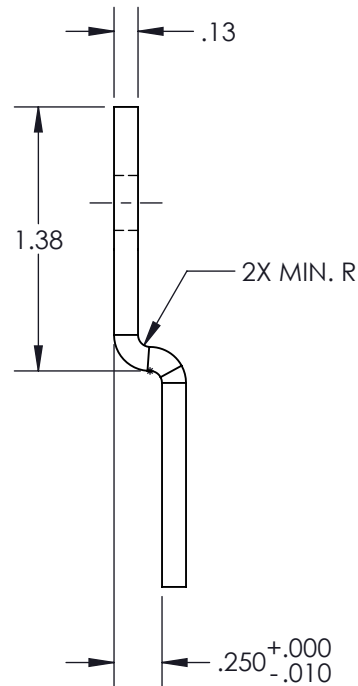
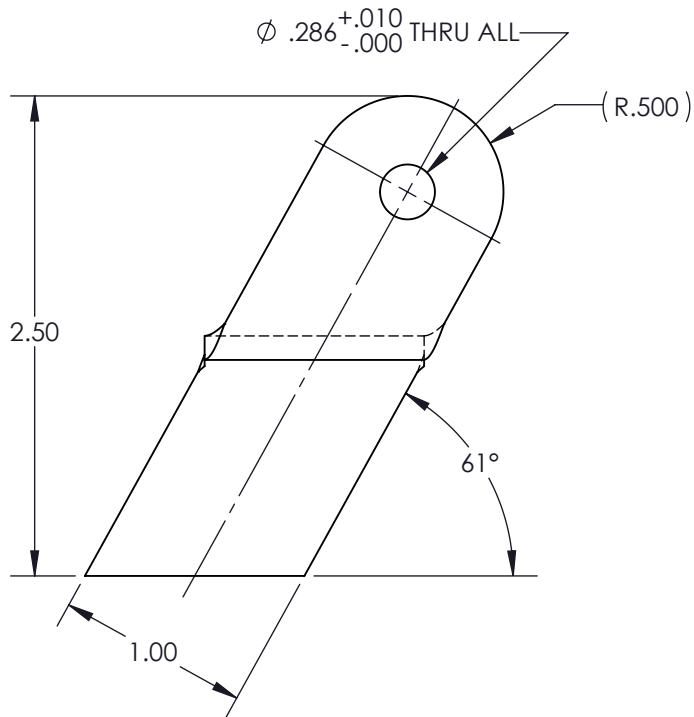
(-25)

GUSSET PLATE

DART AEROSPACE	
TITLE ENGINE TRANSPORT STAND	
DWG NO. RBW7105G00131-3G-25	REV 6
MAT'L A36/1018/1020 HR	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
HEAT TREAT	.XXX ± .010 FRACTIONS ± 1/8
FINISH SEE -03 WELDMENT	.XX ± .03 ANGLES ± 1°
SPEC	.X ± .1 SURFACES = 125° ✓
DRAWN BY: PERRITT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: DUERFELDT	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: LINDSAY	USED ON MODEL
APPROVED: GILBERT	AW139
SCALE 1:1	DATE 2/24/2010
SHEET 15 OF 33	

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		CHANGED -25 AND ADDED -26 (HORIZONTAL GUSSET PLATE TO VERTICAL).	4/5/2010	WP	DW
3		ADDED -26 TOLERANCE +.000 -.010 TO .250 DIM PER G.E.	5/10/2011	RJC	RW
4	15-0044	-26 CH'D DIMS WAS .125 IS (.125), WAS R.50 IS (R.500).	2/26/2015	DPD	JAG
5	15-0349	-26 CH'D DIM WAS Ø.266 IS Ø.286 +.010 -.000.	11/2/2015	DPD	JAG
6	17-0045	-26 CH'D MATERIAL WAS 1018/1020 IS A36/1018/1020 HR.	2/14/2017	RJC	JAG



SEE ATTACHED DEVIATION

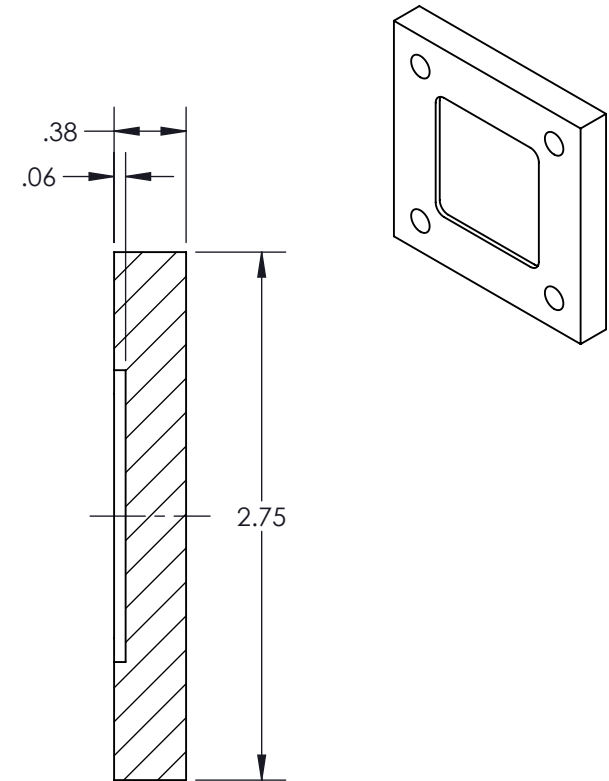
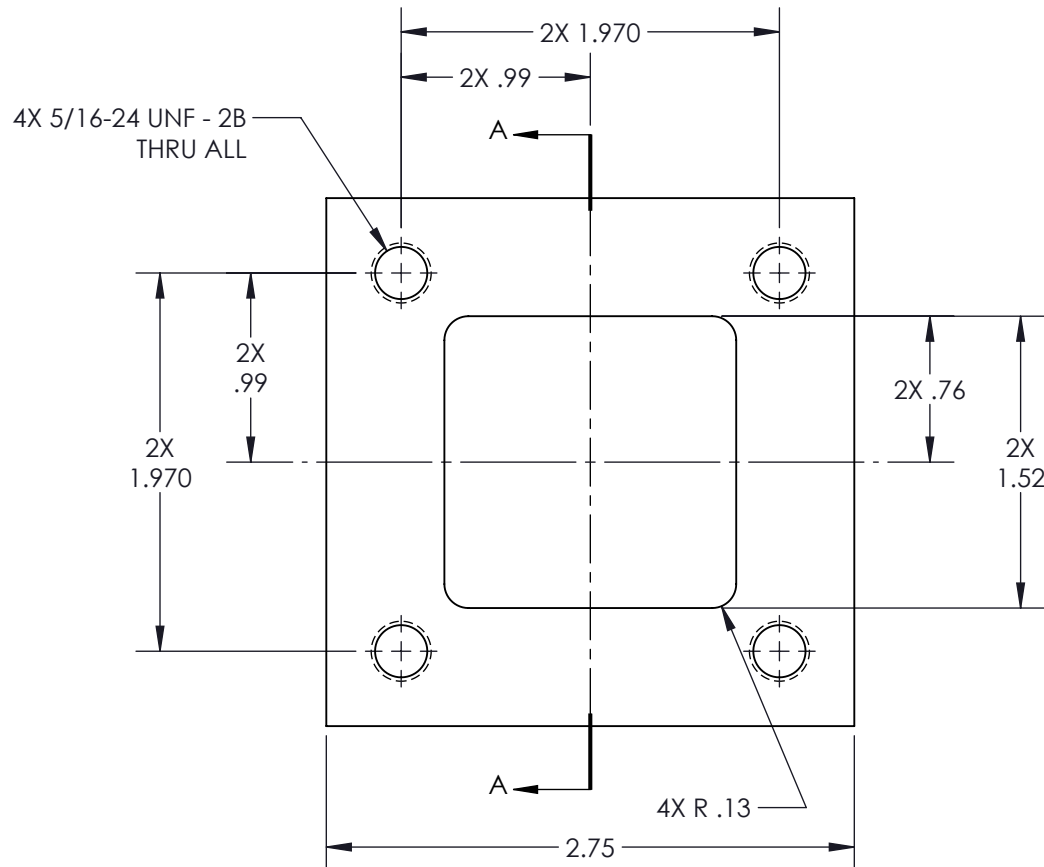
(-26)

GUSSET PLATE

DART AEROSPACE	
TITLE ENGINE TRANSPORT STAND	
DWG NO. RBW7105G00131-3G-26	REV 6
MAT'L A36/1018/1020 HR	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
HEAT TREAT	.XXX ± .010 FRACTIONS ± 1/8
FINISH SEE -03 WELDMENT	.XX ± .03 ANGLES ± 1°
SPEC	.X ± .1 SURFACES = 125
DRAWN BY: PERRITT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: DUERFELDT	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: LINDSAY	USED ON MODEL
APPROVED: GILBERT	AW139
SCALE 1:1	DATE 2/24/2010
SHEET 16 OF 33	

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		ADDED .060 RECESSED AREA TO -27 TOP MOUNT AND LENGTHENED VERT. TUBES -21 & -31 BY .060.	4/5/2010	WP	DW
4	15-0044	-27 CH'D DIM WAS .375 IS (.375).	2/26/2015	DPD	JAG
6	17-0045	-27 CH'D MATERIAL WAS 1018/1020 IS A36/1018/1020 HR.	2/14/2017	RJC	JAG



SECTION A-A

SEE ATTACHED DEVIATION

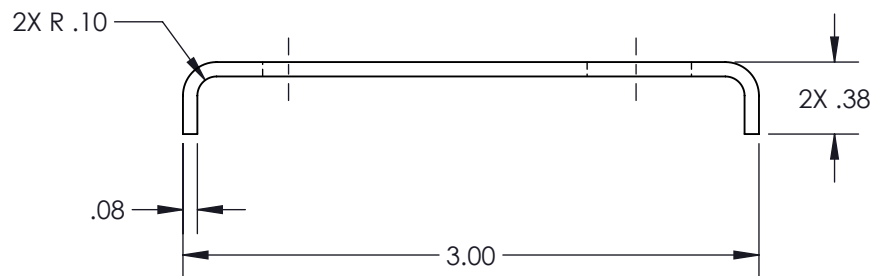
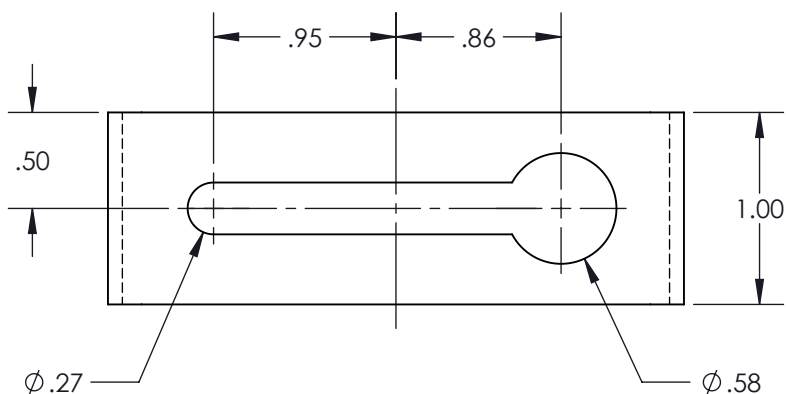
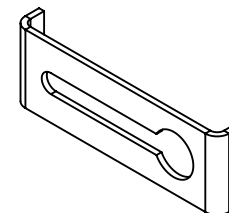
(-27)

TOP MOUNT

DART AEROSPACE	
TITLE ENGINE TRANSPORT STAND	
DWG NO. RBW7105G00131-3G-27	REV 6
MAT'L A36/1018/1020 HR	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
HEAT TREAT SEE -19 & -29 WELDMENTS	.XXX ± .005 FRACTIONS ± 1/8
FINISH SEE -19 & -29 WELDMENTS	.XX ± .01 ANGLES ± 5°
SPEC	.X ± .1 SURFACES = 125°
DRAWN BY: PERRITT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: DUERFELDT	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: LINDSAY	USED ON MODEL
APPROVED: GILBERT	AW139
SCALE 1:1	DATE 2/24/2010
SHEET 17 OF 33	

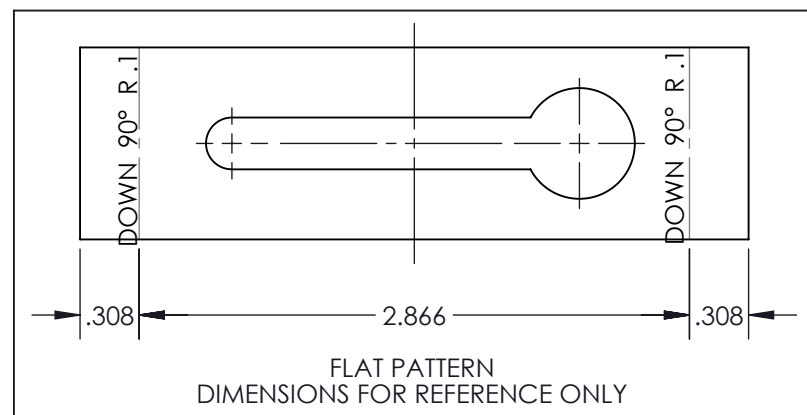
This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
2		SHORTENED -28 FROM 3.22 TO 2.60 [66.0mm].	8/4/2010	RJC	RW
4	15-0044	-28 CH'D DIMS WAS 2.60 IS 3.00, WAS .775 IS .95, WAS .760 IS .86, WAS Ø.257 IS .27.	2/26/2015	DPD	JAG
6	17-0045	-28 CH'D MATERIAL WAS 1018/1020 IS A36/1018/1020 HR.	2/14/2017	RJC	JAG



(-28)

BOLT HOLDER

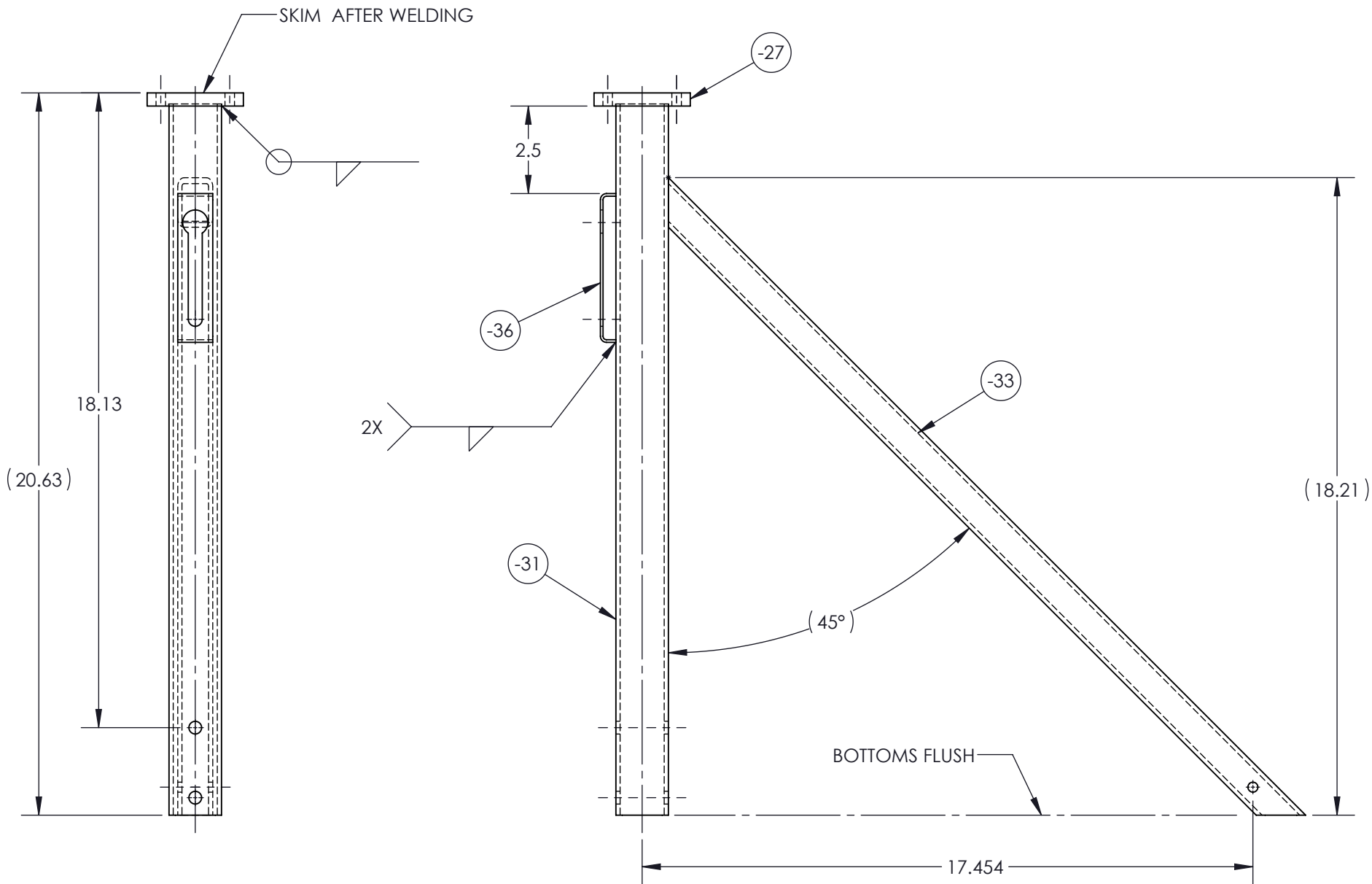


SEE ATTACHED DEVIATION

DART AEROSPACE	
TITLE ENGINE TRANSPORT STAND	
DWG NO. RBW7105G00131-3G-28	REV 6
MAT'L A36/1018/1020 HR	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
HEAT TREAT SEE -19 WELDMENT	.XXX ± .010 FRACTIONS ± 1/8
FINISH SEE -19 WELDMENT	.XX ± .03 ANGLES ± 1°
SPEC	.X ± .1 SURFACES = 125° ✓
DRAWN BY: PERRITT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: DUERFELDT	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: LINDSAY	USED ON MODEL
APPROVED: GILBERT	AW139
SCALE 1:1	DATE 2/24/2010
SHEET 18 OF 33	

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
4	15-0044	-29 CH'D DIMS WAS 18.21 IS 18.12, WAS 17.454 IS 17.36.	2/26/2015	DPD	JAG
5	15-0349	-29 CH'D DIMS WAS 18.12 IS (18.12), WAS 17.36 IS (17.36). ADDED FIXTURE NOTE.	11/3/2015	DPD	JAG
6	17-0045	-29 CH'D DIM WAS (17.36) IS 17.454, WAS 20.63 IS (20.63), ADDED DIM 18.13, CH'D WELD CALL OUT WAS FILLET WELD ALL AROUND IS FILLET WELD.	2/14/2017	RJC	JAG



NOTE:
USE -03 BOTTOM WELDMENT AS FIXTURE FOR WELDING.

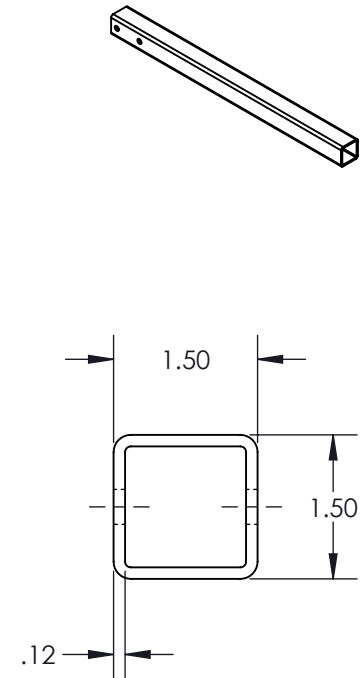
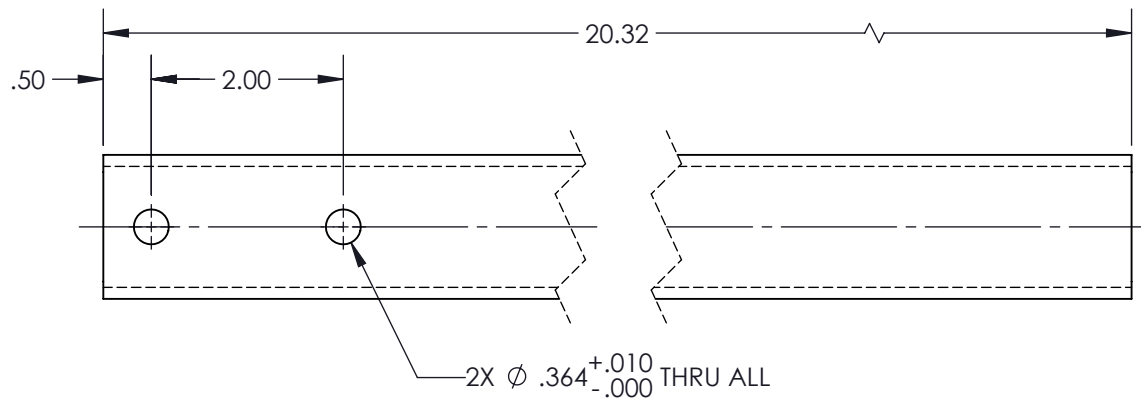
DART AEROSPACE			
TITLE ENGINE TRANSPORT STAND			
DWG NO. RBW7105G00131-3G-29			REV 6
MAT'L HEAT TREAT FINISH POWDER COAT YELLOW SPEC FED #13538		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .010 FRACTIONS ± 1/8 .XX ± .03 ANGLES ±1° .X ± .1 SURFACES = 125°	
DRAWN BY: PERRITT		1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	
CHECKED: DUERFELDT		2. DIMENSIONAL LIMITS APPLY AFTER PLATING	
OPPS APPR: ANDERSON		3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009	
QA APPR: LINDSAY		USED ON MODEL	
APPROVED: GILBERT		AW139	
SCALE 1:4		DATE 2/24/2010	SHEET 19 OF 33

(-29)
REAR VERT. WELDMENT

SEE ATTACHED DEVIATION

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		ADDED .060 RECESSED AREA TO -27 TOP MOUNT AND LENGTHENED VERT. TUBES -21 & -31 BY .060.	4/5/2010	WP	DW
4	15-0044	-31 CH'D DIMS WAS Ø.323 IS Ø.344, WAS 1.50 IS (1.500), WAS 1.50 IS (1.500), WAS .12 IS (.120).	2/26/2015	DPD	JAG
5	15-0349	-31 CH'D DIM WAS 2X Ø.344 IS 2X Ø.364 +.010 -.000.	11/3/2015	DPD	JAG



SEE ATTACHED DEVIATION

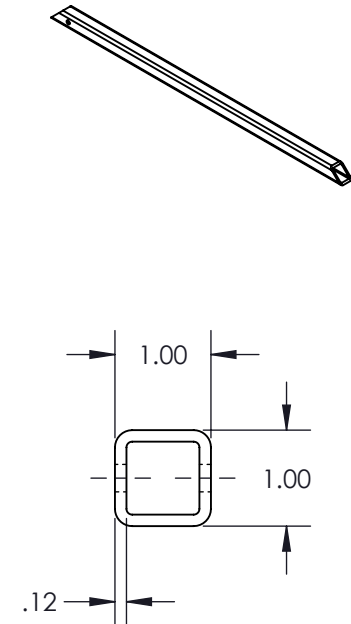
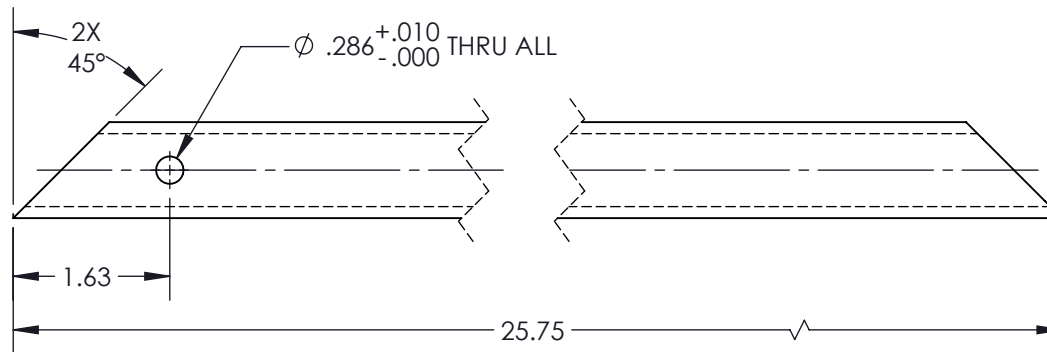
(-31)

REAR VERT. SUPPORT

DART AEROSPACE	
TITLE ENGINE TRANSPORT STAND	
DWG NO. RBW7105G00131-3G-31	REV. 6
MAT'L STEEL SQ. TUBE	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
HEAT TREAT	.XXX ± .010 FRACTIONS ± 1/8
FINISH SEE -29 WELDMENT	.XX ± .03 ANGLES ± 1°
SPEC	.X ± .1 SURFACES = 125° ✓
DRAWN BY: PERRITT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: DUERFELDT	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: LINDSAY	USED ON MODEL
APPROVED: GILBERT	AW139
SCALE 1:2	DATE 2/24/2010
SHEET 20 OF 33	

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
4	15-0044	-33 CH'D DIMS WAS 25.750 IS 25.63, WAS 1.00 IS (1.000), WAS 1.00 IS (1.000), WAS .12 IS (.120).	2/26/2015	DPD	JAG
5	15-03498	-33 CH'D DIM WAS Ø.266 IS Ø.286 +.010 -.000.	11/3/2015	DPD	JAG
6	17-0045	-33 CH'D DIM WAS 25.63 IS 25.75.	2/14/2017	RJC	JAG



SEE ATTACHED DEVIATION

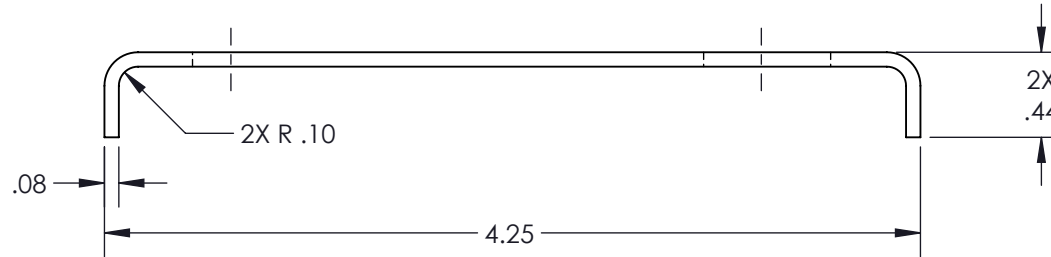
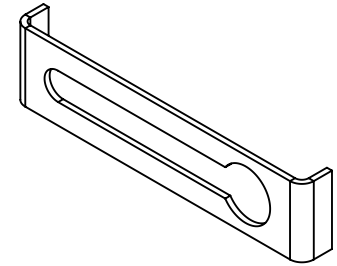
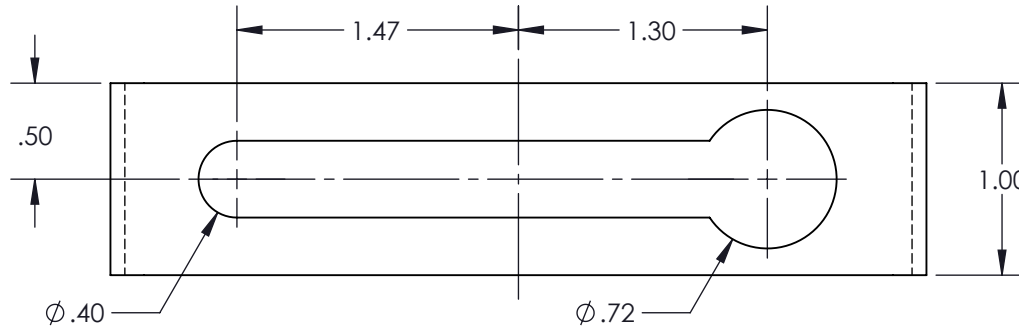
(-33)

BRACE TUBE

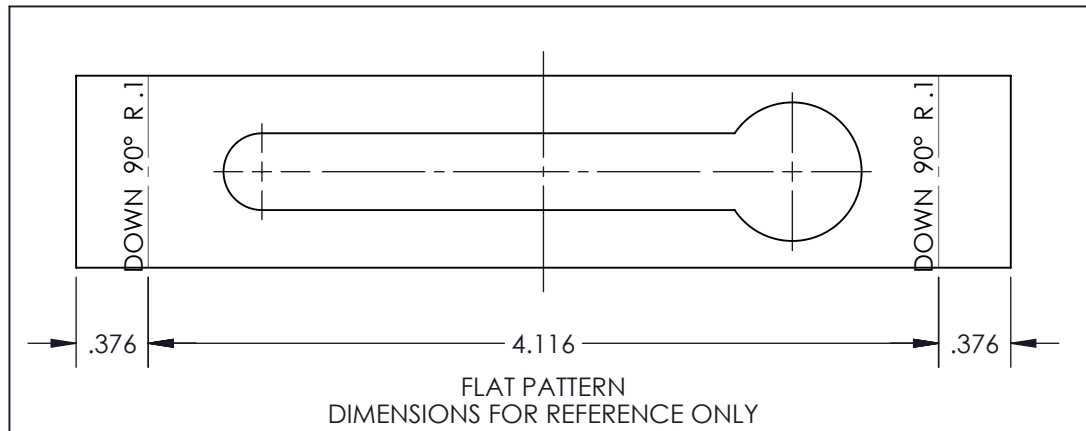
DART AEROSPACE	
TITLE ENGINE TRANSPORT STAND	
DWG NO. RBW7105G00131-3G-33	REV 6
MAT'L STEEL SQ. TUBE	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
HEAT TREAT	.XXX ± .010 FRACTIONS ± 1/8
FINISH SEE -29 WELDMENT	.XX ± .03 ANGLES ± 1°
SPEC	.X ± .1 SURFACES = 125° ✓
DRAWN BY: PERRITT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: DUERFELDT	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: LINDSAY	USED ON MODEL
APPROVED: GILBERT	AW139
SCALE 1:2	DATE 2/24/2010
SHEET 21 OF 33	

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
2		SHORTENED -36 FROM 4.65 TO 3.65 [92.8mm] PER W.P.	8/4/2010	RJC	RW
4	15-0044	-36 CH'D DIMS WAS 3.65 IS 4.25, WAS Ø.386 IS Ø.40, WAS 1.31 IS 1.47, WAS 1.14 IS 1.30.	2/26/2015	DPD	JAG
6	17-0045	-36 CH'D MATERIAL WAS 1018/1020 IS A36/1018/1020 HR.	2/14/2017	RJC	JAG



SEE ATTACHED DEVIATION



FLAT PATTERN
DIMENSIONS FOR REFERENCE ONLY

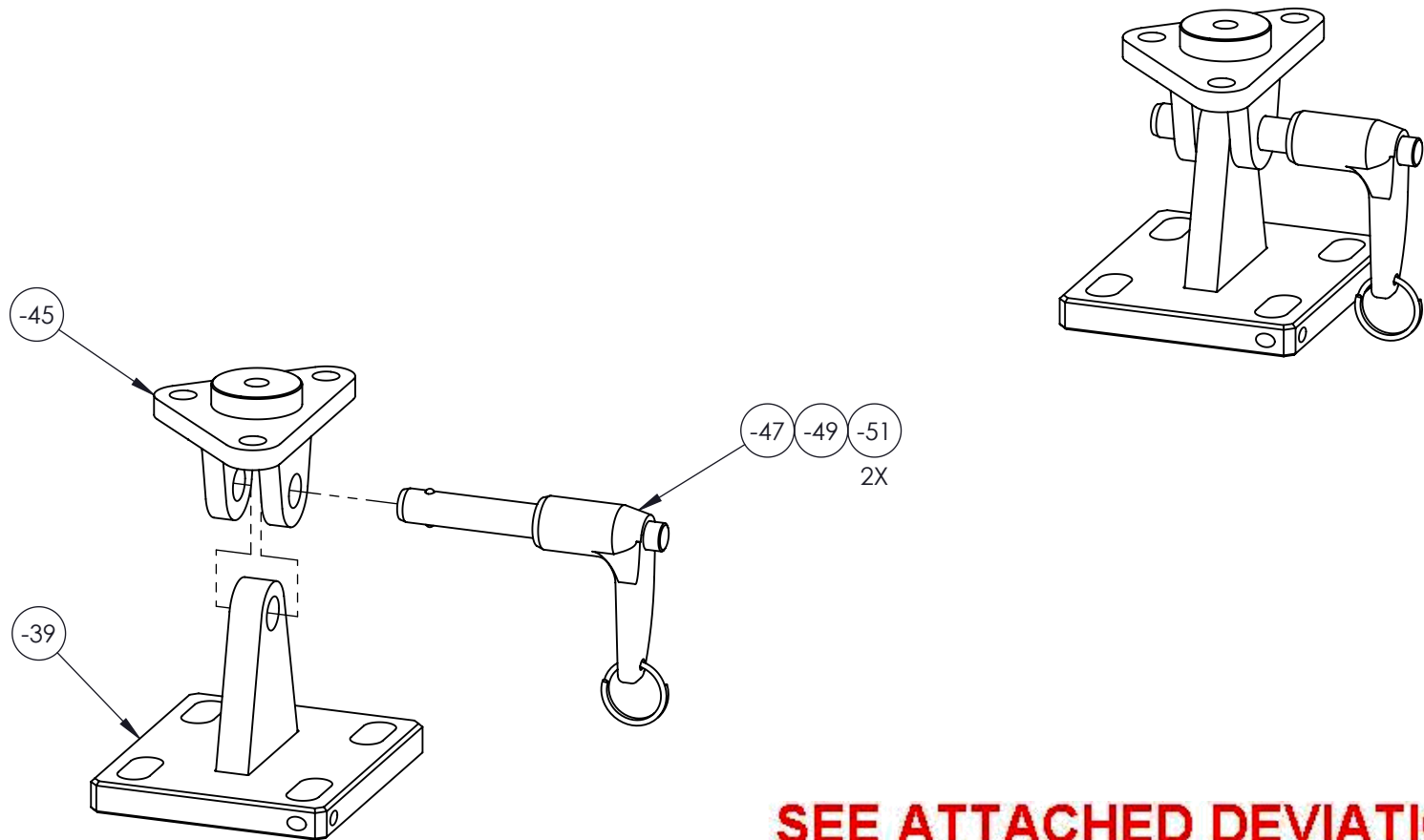
(-36)

BOLT HOLDER

DART AEROSPACE	
TITLE ENGINE TRANSPORT STAND	
DWG NO. RBW7105G00131-3G-36	REV 6
MAT'L A36/1018/1020 HR	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
HEAT TREAT SEE -29 WELDMENT	.XXX ± .010 FRACTIONS ± 1/8
FINISH SEE -29 WELDMENT	.XX ± .03 ANGLES ± 1°
SPEC	.X ± .1 SURFACES = 125° ✓
DRAWN BY: PERRITT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: DUERFELDT	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: LINDSAY	USED ON MODEL
APPROVED: GILBERT	AW139
SCALE 1:1	DATE 2/24/2010
SHEET 22 OF 33	

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS				
REV	ECR	DESCRIPTION	DATE	INITIAL
				APPROVED



SEE ATTACHED DEVIATION

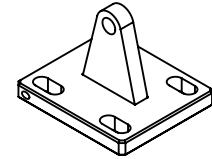
(-37)

FRONT ENGINE MOUNT ASSEMBLY

DART AEROSPACE	
TITLE ENGINE TRANSPORT STAND	
DWG NO. RBW7105G00131-3G-37	REV 6
MAT'L HEAT TREAT FINISH	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .005 FRACTIONS ± 1/8 .XX ± .01 ANGLES ± .5° .X ± .1 SURFACES = 125°
SPEC	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
DRAWN BY: PERRITT	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
CHECKED: DUERFELDT	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
OPPS APPR: ANDERSON	
QA APPR: LINDSAY	USED ON MODEL
APPROVED: GILBERT	AW139
SCALE 1:2	DATE 2/24/2010
SHEET 23 OF 33	

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
4	15-0044	-39 ADDED DIM Ø.375 THRU ALL.	2/26/2015	DPD	JAG
6	17-0045	-39 CH'D FINISH WAS CAD PLATE YELLOW IS ZINC PLATE SPEC ASTM B633 TYPE I SC2, CH'D TOLERANCE WAS .XXX ±.005 .XX ±.01 IS .XXX ±0.10 .XX ±.03.	2/14/2017	RJC	JAG



Ø .379
THRU ALL

-43

-41

1.97

SKIM AFTER WELDING

.005 A

SEE ATTACHED DEVIATION

A

-39

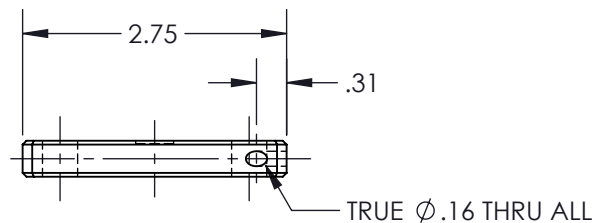
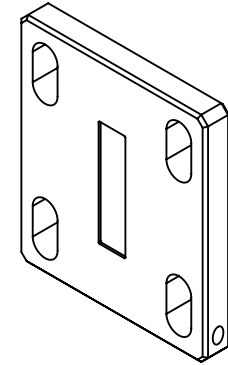
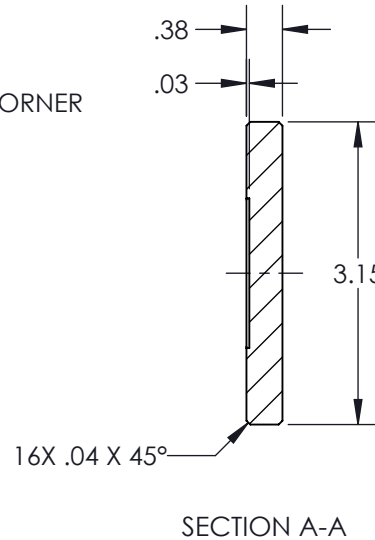
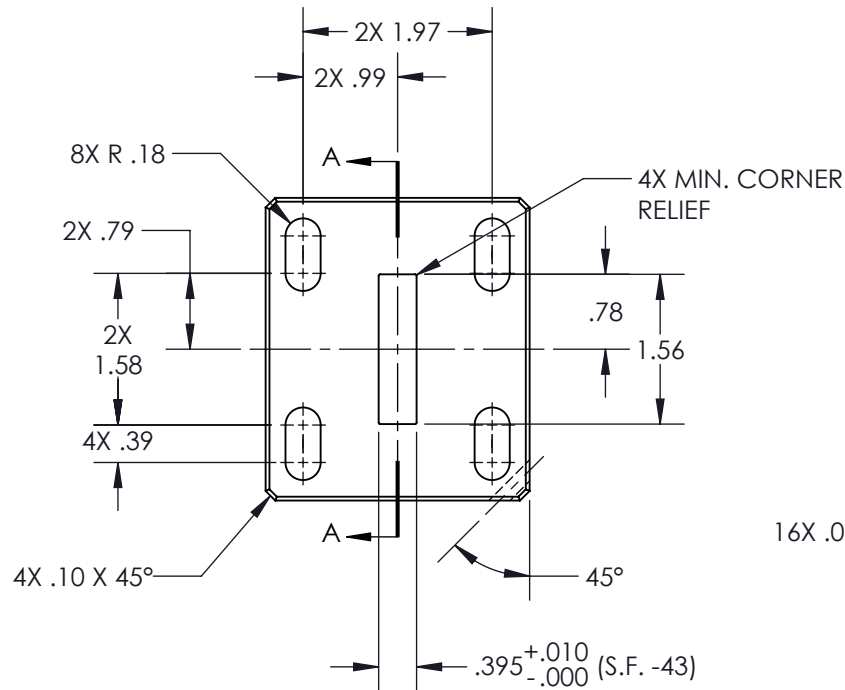
FRONT WELDMENT



TITLE		ENGINE TRANSPORT STAND	
DWG NO.		RBW7105G00131-3G-39	
REV		6	
MAT'L		UNLESS OTHERWISE SPECIFIED	
HEAT TREAT		DIMENSIONS ARE IN INCHES	
FINISH ZINC PLATE		.XXX ± .010 FRACTIONS ± 1/8	
SPEC ASTM B633 TYPE I SC 2		.XX ± .03 ANGLES ± 1°	
DRAWN BY: PERRITT		.X ± .1 SURFACES = 125°	
CHECKED: DUERFELDT		1. BREAK ALL SHARP EDGES	
OPPS APPR: ANDERSON		.015 x 45° OR .015R	
QA APPR: LINDSAY		2. DIMENSIONAL LIMITS APPLY	
APPROVED: GILBERT		AFTER PLATING	
SCALE 1:1		3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009	
DATE 2/24/2010		USED ON MODEL	
SHEET 24 OF 33		AW139	

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
4	15-0044	-41 CH'D DIMS WAS .375 S.F. -43 IS .39 S.F. -43, WAS .770 IS .78, WAS 1.539 IS 1.56. WAS .375 IS (.375). ADDED 4X MIN. CORNER RELIEF.	2/26/2015	DPD	JAG
6	17-0045	-41 CH'D DIM WAS .39 S.F. -43 IS .395 +.010/-.000 (S.F. -43), CH'D MATERIAL WAS 1018/1020 IS A36/1018/1020 HR.	2/14/2017	RJC	JAG



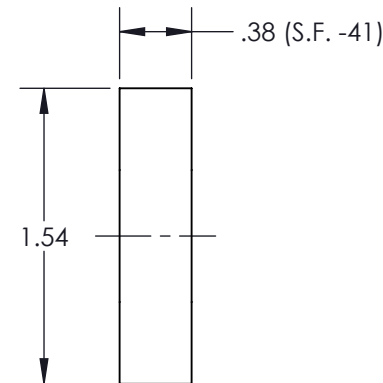
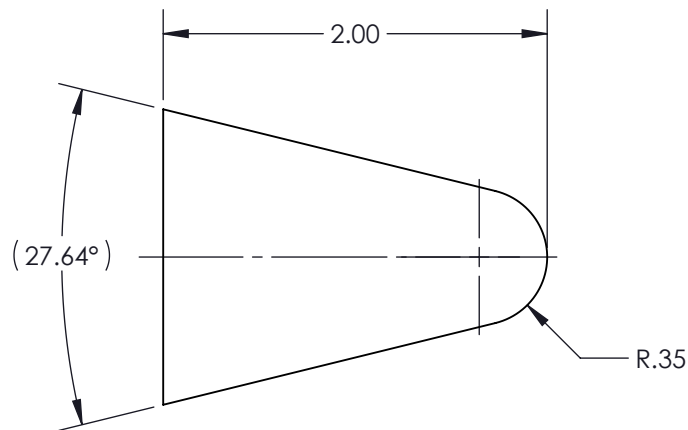
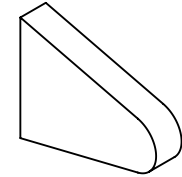
(-41)
BASE

SEE ATTACHED DEVIATION

DART AEROSPACE	
TITLE ENGINE TRANSPORT STAND	
DWG NO. RBW7105G00131-3G-41	REV 6
MAT'L A36/1018/1020 HR	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
HEAT TREAT SEE -39 WELDMENT	.XXX ± .005 FRACTIONS ± 1/8
FINISH SEE -39 WELDMENT	.XX ± .01 ANGLES ± 5°
SPEC	.X ± .1 SURFACES = 125°
DRAWN BY: PERRITT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: DUERFELDT	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: LINDSAY	USED ON MODEL
APPROVED: GILBERT	AW139
SCALE 1:2	DATE 2/24/2010
SHEET 25 OF 33	

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
4	15-0044	-43 CH'D DIM WAS .375 IS (.375) S.F. -41.	2/26/2015	DPD	JAG
6	17-0045	-43 CH'D MATERIAL WAS 1018/1020 IS A36/1018/1020 HR.	2/14/2017	RJC	JAG



SEE ATTACHED DEVIATION

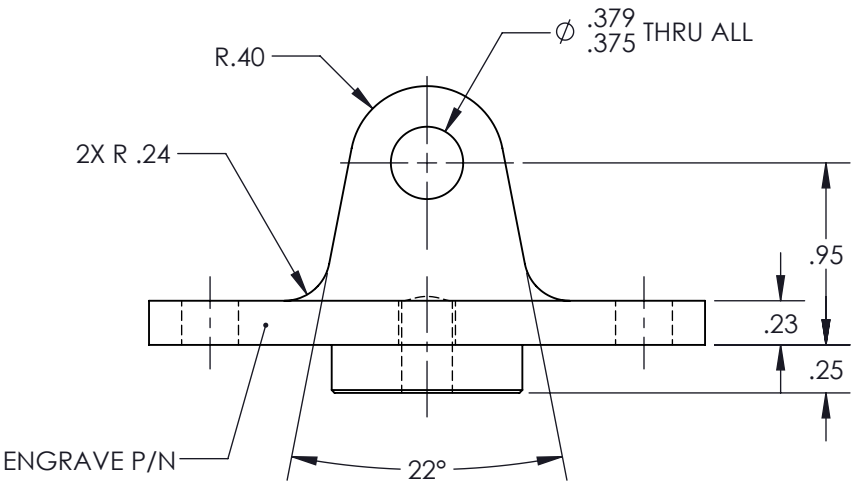
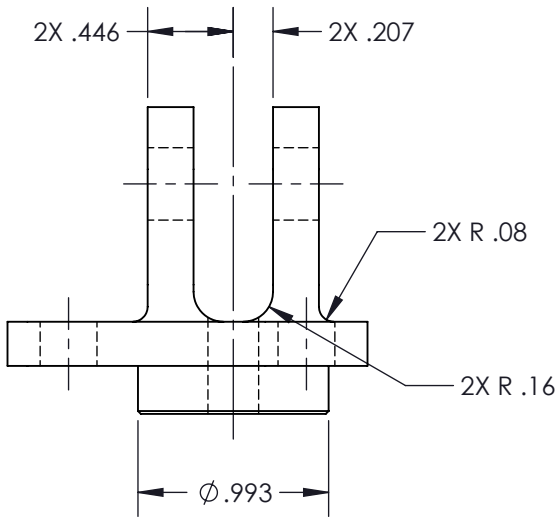
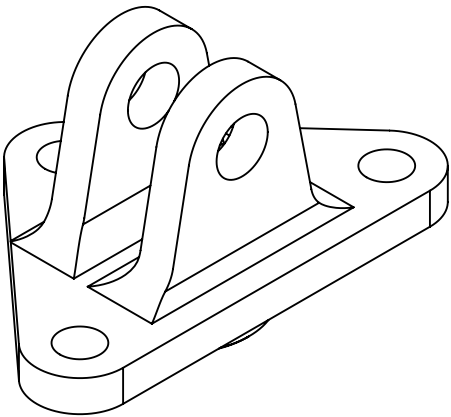
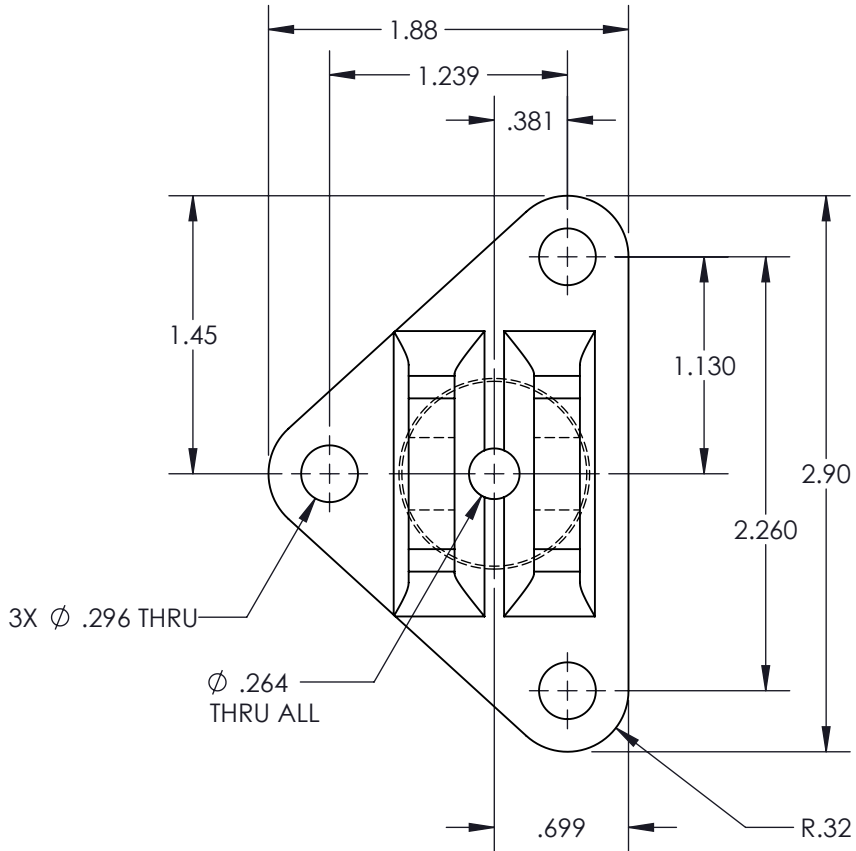
(-43)

FRONT VERT. MOUNT

DART AEROSPACE	
TITLE ENGINE TRANSPORT STAND	
DWG NO. RBW7105G00131-3G-43	REV 6
MAT'L A36/1018/1020 HR	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
HEAT TREAT	.XXX ± .005 FRACTIONS ± 1/8
FINISH SEE -39 WELDMENT	.XX ± .01 ANGLES ± .5°
SPEC	.X ± .1 SURFACES = 125° ✓
DRAWN BY: PERRITT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: DUERFELDT	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: LINDSAY	USED ON MODEL
APPROVED: GILBERT	AW139
SCALE 1:1	DATE 2/24/2010
SHEET 26 OF 33	

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
5	15-0349	-45 ADDED ENGRAVE NOTE.	11/3/2015	DPD	JAG
6	17-0045	-45 CH'D MATERIAL WAS 1018/1020 IS 1018/1020 CR, CH'D FINISH WAS CAD PLATE YELLOW IS ZINC PLATE SPEC ASTM B633 TYPE I SC 2.	2/14/2017	RJC	JAG



SEE ATTACHED DEVIATION

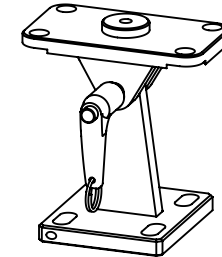
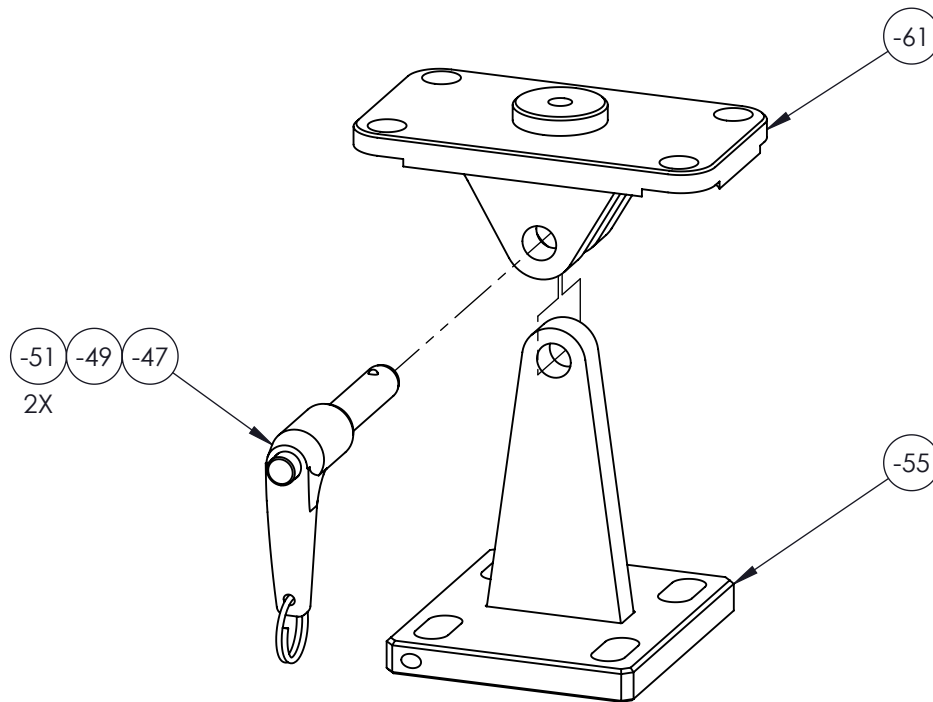
(-45)

FRONT MOTOR MOUNT

DART AEROSPACE			
TITLE ENGINE TRANSPORT STAND			
DWG NO. RBW7105G00131-3G-45			REV 6
MAT'L 1018/1020 CR		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
HEAT TREAT		.XXX \pm .005 FRACTIONS \pm 1/8	
FINISH ZINC PLATE		.XX \pm .01 ANGLES \pm 5°	
SPEC ASTM B633 TYPE I SC 2		.X \pm .1 SURFACES = 125/	
DRAWN BY: PERRITT		1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	
CHECKED: DUERFELDT		2. DIMENSIONAL LIMITS APPLY AFTER PLATING	
OPPS APPR: ANDERSON		3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009	
QA APPR: LINDSAY		USED ON MODEL	
APPROVED: GILBERT		AW139	
SCALE 1:1		DATE 2/24/2010	SHEET 27 OF 33

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS				
REV	ECR	DESCRIPTION	DATE	INITIAL
				APPROVED



SEE ATTACHED DEVIATION

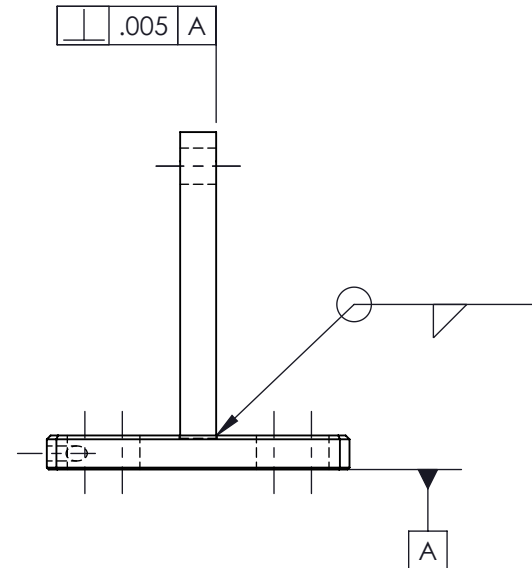
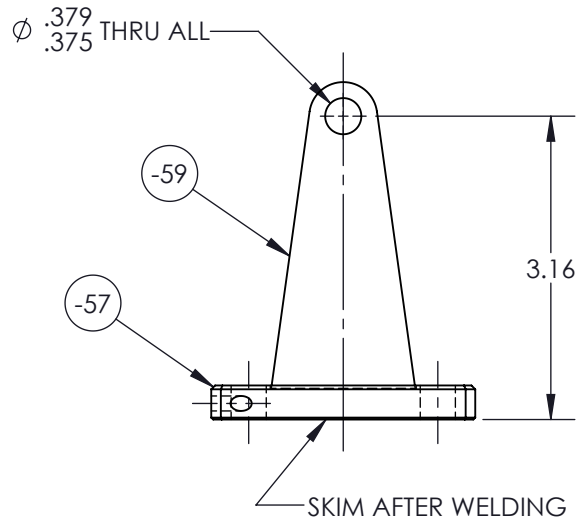
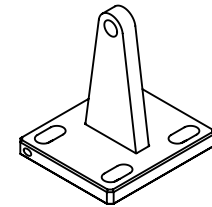
(-53)

REAR ENGINE MOUNT ASSEMBLY

DART AEROSPACE	
TITLE ENGINE TRANSPORT STAND	
DWG NO. RBW7105G00131-3G-53	REV 6
MAT'L HEAT TREAT FINISH SPEC	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .005 FRACTIONS ± 1/8 .XX ± .01 ANGLES ± .5° .X ± .1 SURFACES = 125°
DRAWN BY: PERRITT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: DUERFELDT	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: LINDSAY	USED ON MODEL
APPROVED: GILBERT	AW139
SCALE 1:2	DATE 2/24/2010
SHEET 28 OF 33	

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
4	15-0044	-55 ADDED DIM Ø.375 THRU ALL.	2/26/2015	DPD	JAG
6	17-0045	-55 CH'D FINISH WAS CAD PLATE YELLOW IS ZINC PLATE SPEC ASTM B633 TYPE I SC2.	2/14/2017	RJC	JAG



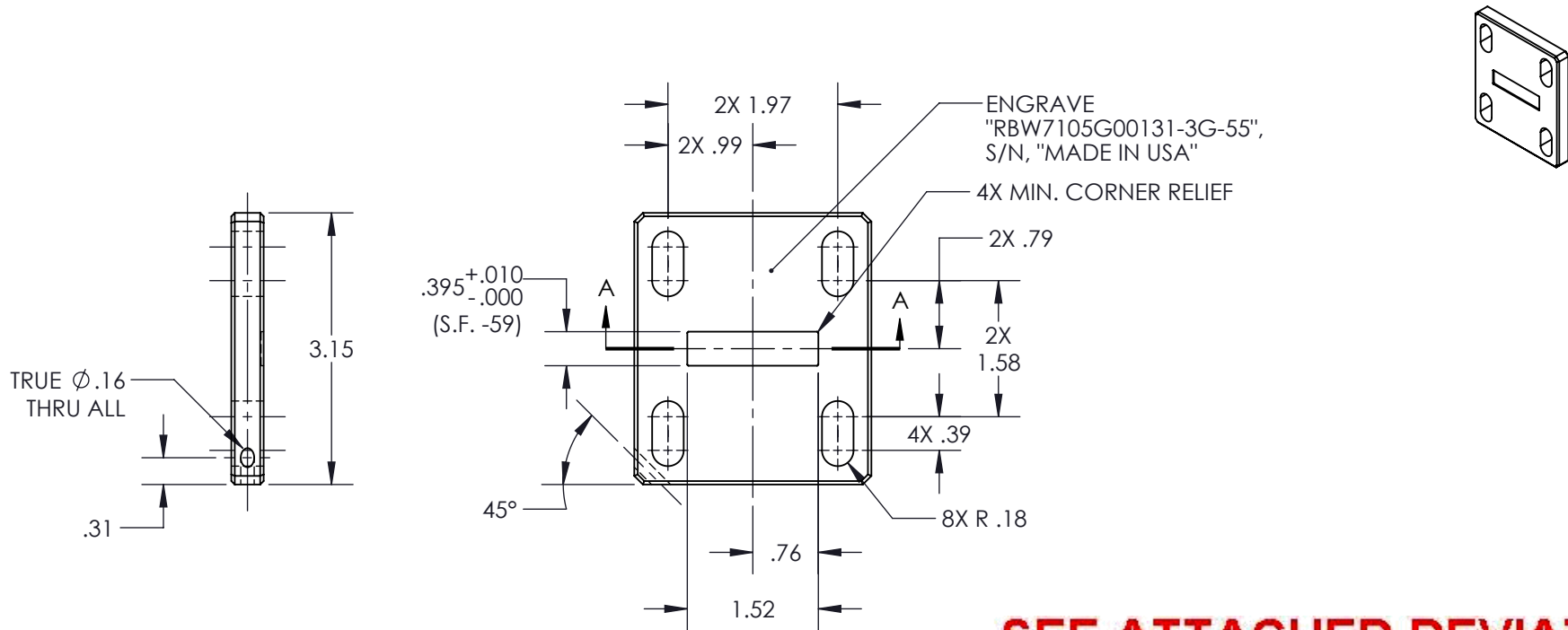
SEE ATTACHED DEVIATION

(-55)
REAR WELDMENT

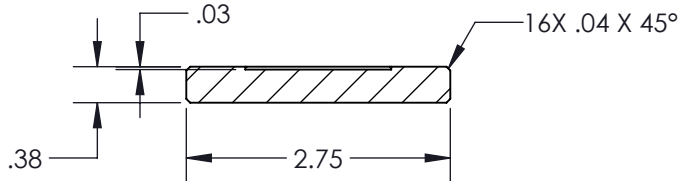
DART AEROSPACE	
TITLE ENGINE TRANSPORT STAND	
DWG NO. RBW7105G00131-3G-55	REV 6
MAT'L ZINC PLATE	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .005 FRACTIONS ± 1/8 .XX ± .01 ANGLES ± 5° .X ± .1 SURFACES = 125°
SPEC ASTM B633 TYPE I SC 2	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
DRAWN BY: PERRITT	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
CHECKED: DUERFELDT	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
OPPS APPR: ANDERSON	USED ON MODEL
QA APPR: LINDSAY	AW139
APPROVED: GILBERT	
SCALE 1:2	DATE 2/24/2010
SHEET 29 OF 33	

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
4	15-0044	-57 CH'D DIMS WAS .375 IS .39 S.F. -59, WAS .750 IS .76, WAS 1.503 IS 1.52, WAS .375 IS (.375). ADDED 4X MIN. CORNER RELIEF.	2/26/2015	DPD	JAG
5	15-0349	-57 ADDED ENGRAVE NOTE.	11/3/2015	DPD	JAG
6	17-0045	-57 CH'D DIM WAS .39 S.F. -59 IS .395 +.010/-0.000 (S.F. -59). CH'D MATERIAL WAS 1018/1020 IS A36/1018/1020 HR.	2/14/2017	RJC	JAG



SEE ATTACHED DEVIATION



SECTION A-A

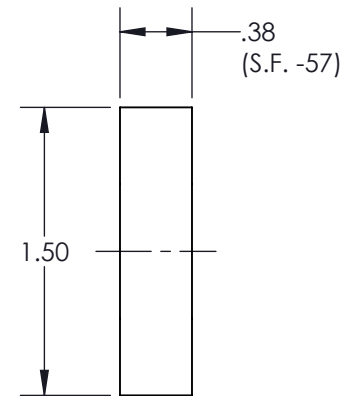
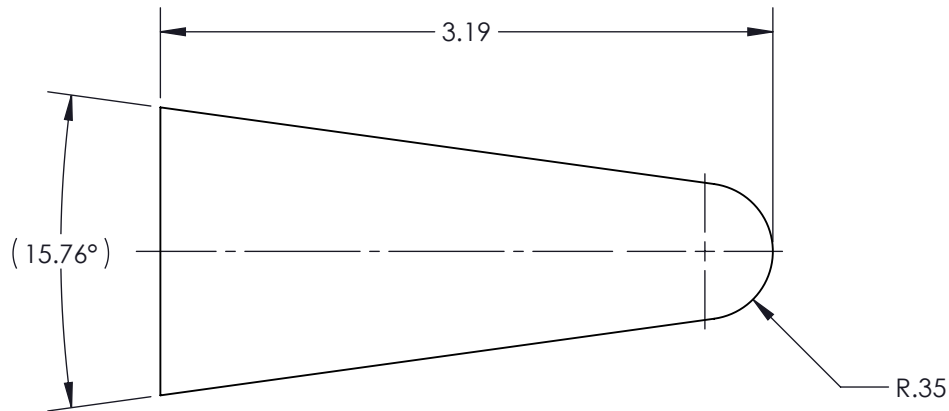
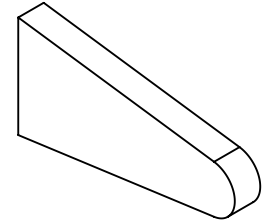
(-57)

BASE

DART AEROSPACE	
TITLE ENGINE TRANSPORT STAND	
DWG NO. RBW7105G00131-3G-57	REV 6
MAT'L A36/1018/1020 HR	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
HEAT TREAT SEE -55 WELDMENT	.XXX ± .005 FRACTIONS ± 1/8
FINISH SEE -55 WELDMENT	.XX ± .01 ANGLES ± .5°
SPEC	.X ± .1 SURFACES = 125
DRAWN BY: PERRITT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: DUERFELDT	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: LINDSAY	USED ON MODEL
APPROVED: GILBERT	AW139
SCALE 1:2	DATE 2/24/2010
SHEET 30 OF 33	

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
4	15-0044	-59 CH'D DIM WAS .375 IS (.375) S.F. -57.	2/26/2015	DPD	JAG
6	17-0045	-59 CH'D MATERIAL WAS 1018/1020 IS A36/1018/1020 HR.	2/14/2017	RJC	JAG



SEE ATTACHED DEVIATION

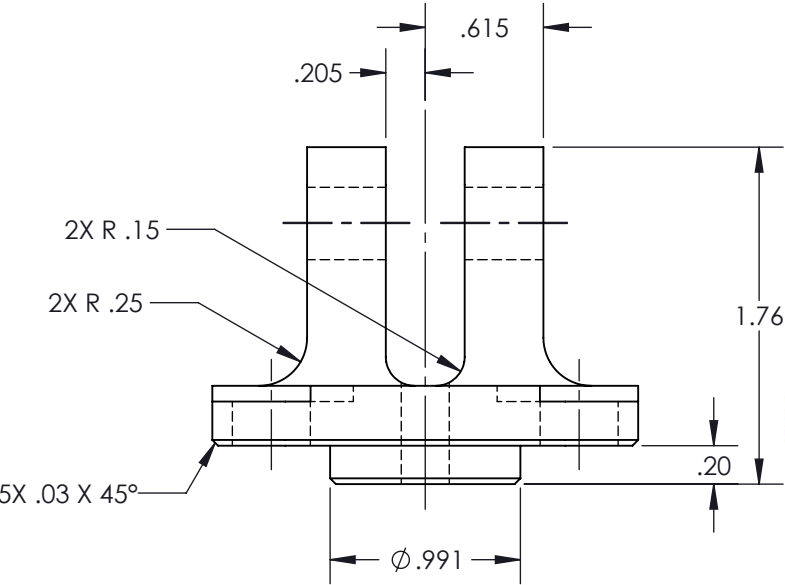
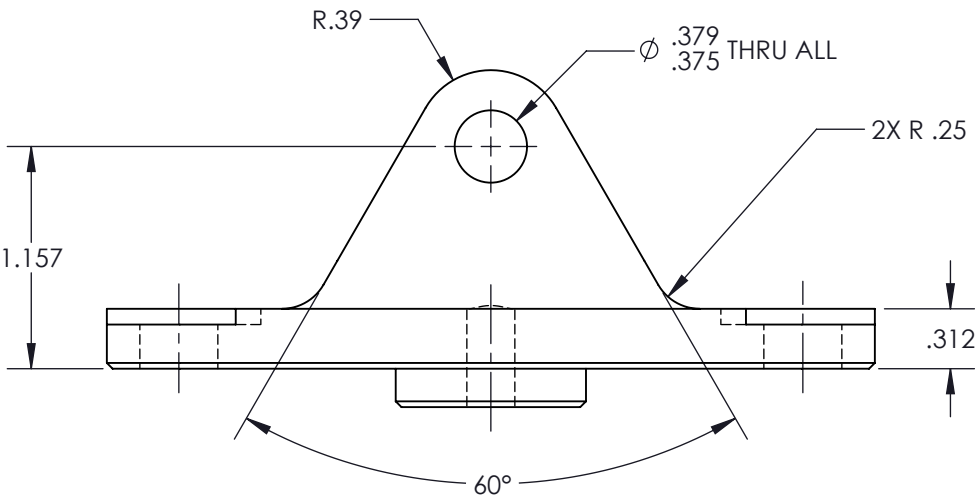
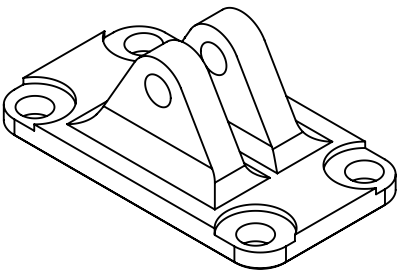
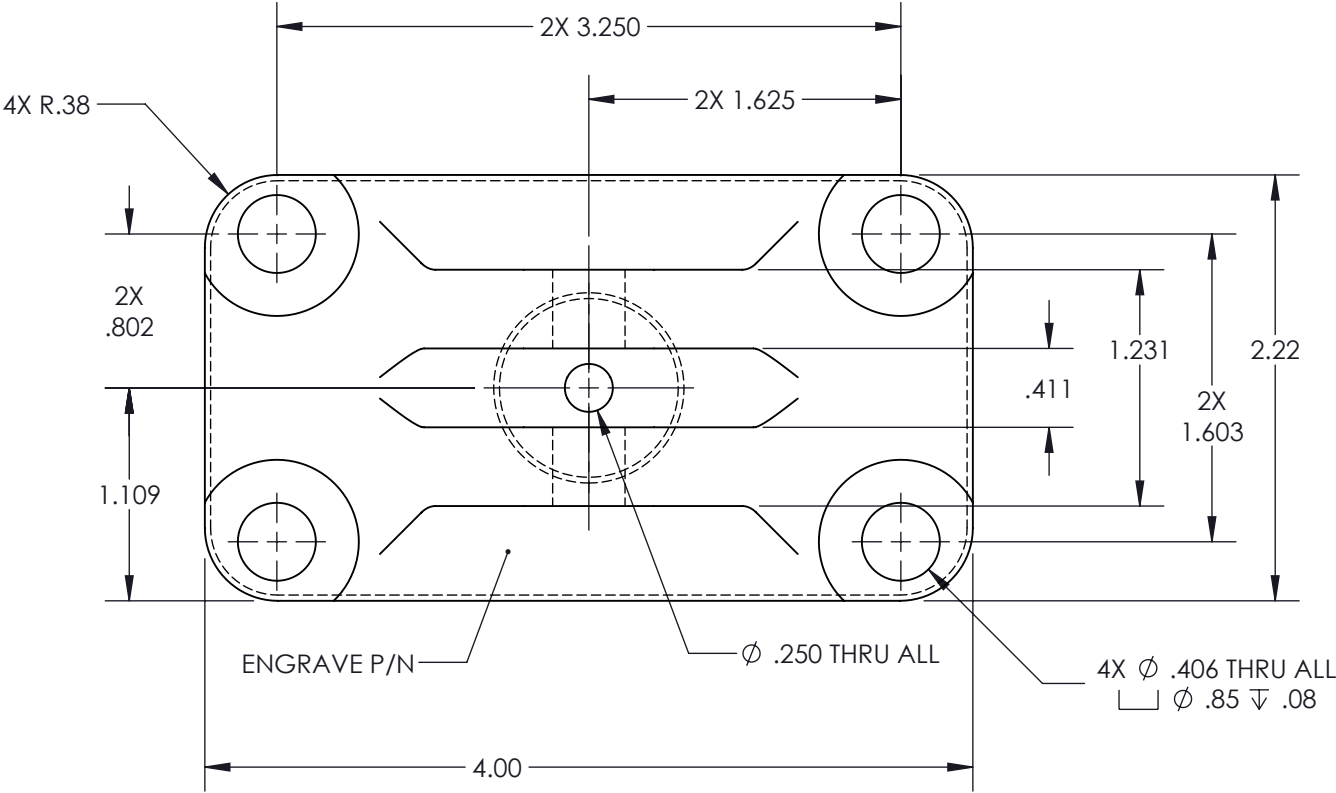
(-59)

REAR VERT. MOUNT

DART AEROSPACE	
TITLE ENGINE TRANSPORT STAND	
DWG NO. RBW7105G00131-3G-59	REV 6
MAT'L A36/1018/1020 HR	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
HEAT TREAT	.XXX ± .005 FRACTIONS ± 1/8
FINISH SEE -55 WELDMENT	.XX ± .01 ANGLES ± .5°
SPEC	.X ± .1 SURFACES = 125°
DRAWN BY: PERRITT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: DUERFELDT	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: LINDSAY	USED ON MODEL
APPROVED: GILBERT	AW139
SCALE 1:1	DATE 2/24/2010
SHEET 31 OF 33	

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
5	15-0349	-61 ADDED ENGRAVE NOTE.	11/3/2015	DPD	JAG
6	17-0045	-61 CH'D MAT'L WAS 1018/1020 IS 1018/1020 CR, CH'D FINISH WAS CAD PLATE YELLOW IS ZINC PLATE SPEC ASTM B633 TYPE I SC2.	2/14/2017	RJC	JAG



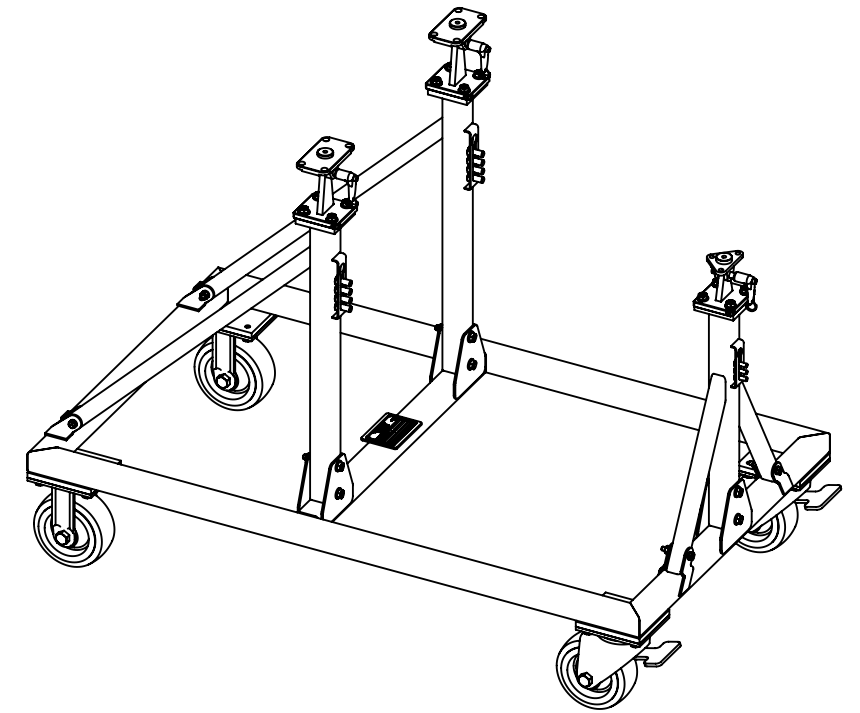
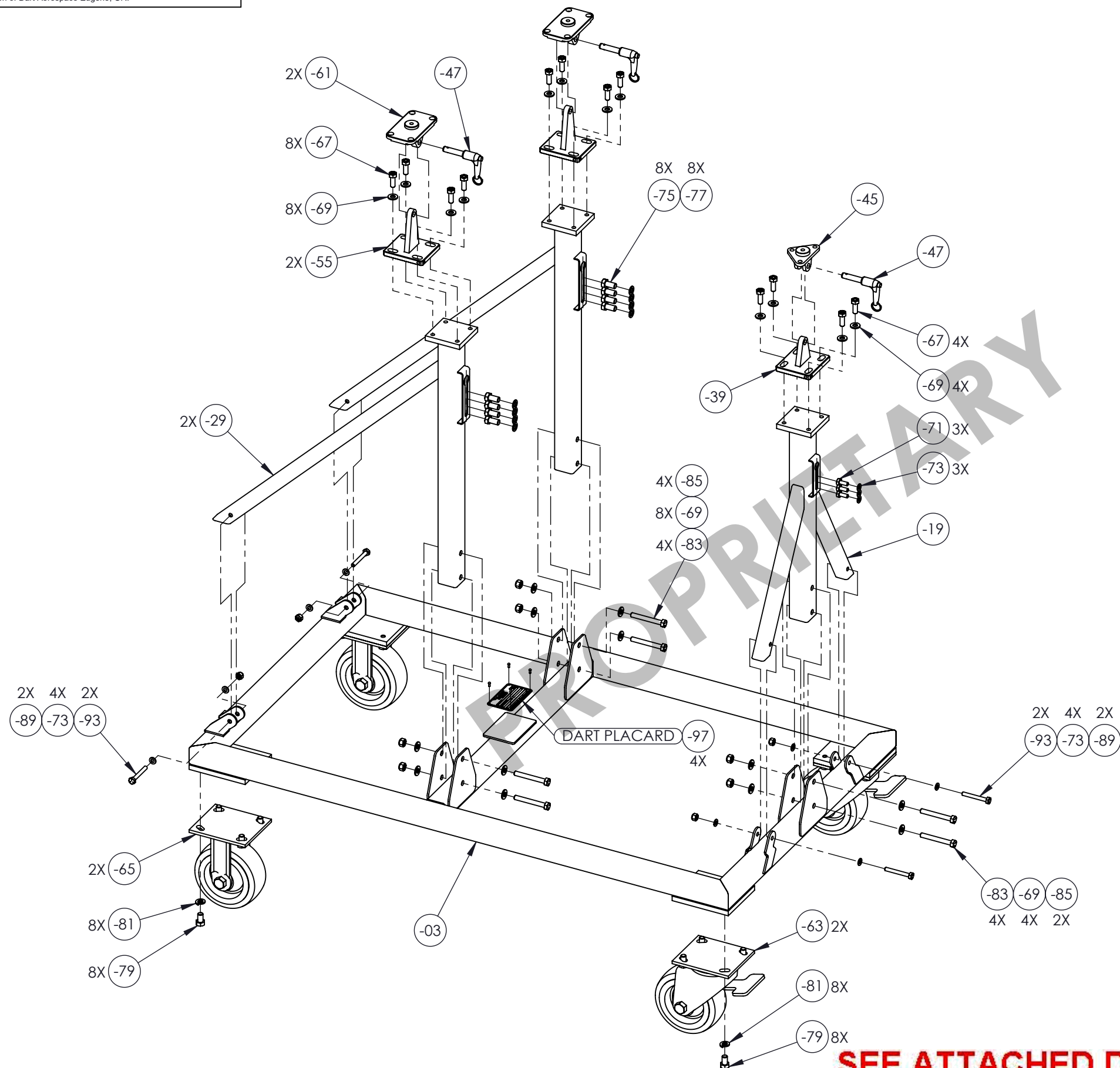
SEE ATTACHED DEVIATION

-61

REAR MOTOR MOUNT

DART AEROSPACE			
TITLE ENGINE TRANSPORT STAND			
DWG NO. RBW7105G00131-3G-61			REV 6
MAT'L 1018/1020 CR		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
HEAT TREAT		.XXX ± .005 FRACTIONS ± 1/8	
FINISH ZINC PLATE		.XX ± .01 ANGLES ± .5°	
SPEC ASTM B633 TYPE I SC 2		.X ± .1 SURFACES = 125/	
DRAWN BY: PERRITT		1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	
CHECKED: DUERFELDT		2. DIMENSIONAL LIMITS APPLY AFTER PLATING	
OPPS APPR: ANDERSON		3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009	
QA APPR: LINDSAY		USED ON MODEL	
APPROVED: GILBERT		AW139	
SCALE 1:1	DATE 2/24/2010	SHEET 32 OF 33	

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.



Part #	UNIT QTY	Description	Material
-03	1	BOTTOM WELDMENT	
-19	1	FRONT VERT. WELDMENT	
-29	2	REAR VERT. WELDMENT	
-39	1	FRONT WELDMENT	
-45	1	FRONT MOTOR MOUNT	1018/1020 CR
-47	2	BALL LOCK PIN	S.S.
-55	2	REAR WELDMENT	
-61	1	REAR MOTOR MOUNT	1018/1020 CR
-63	2	SWIVEL CASTER W/ BRAKES	HARD RUBBER
-65	2	RIGID CASTER WHEEL	HARD RUBBER
-67	12	HEX HEAD CAP SCREW	STEEL
-69	24	FLAT WASHER	STEEL
-71	3	HEX HEAD CAP SCREW	STEEL
-73	11	FLAT WASHER	STEEL
-75	8	HEX HEAD CAP SCREW	STEEL
-77	8	FLAT WASHER	STEEL
-79	16	HEX HEAD CAP SCREW	STEEL
-81	16	SPLIT LOCK WASHER	STEEL
-83	6	HEX HEAD CAP SCREW	STEEL
-85	6	NYLON LOCK NUT	STEEL
-89	4	NYLON LOCK NUTS	STEEL
-93	4	HEX HEAD CAP SCREW	STEEL
-97	4	DRIVE SCREW	STEEL
	1	PLACARD	ALUMINUM



190 S. Danebo Ave., Eugene, OR. 97402
1-800-556-4166
e-mail: sales@dartaero.com
dartaerospace.com

TITLE	ENGINE TRANSPORT STAND
-------	------------------------

DWG NO.	REV	
RBW7105G00131-3G	6	CUSTOMER 1 OF 1
SCALE 1:8	DATE 2/24/2010	SHEET 33 OF 33

SEE ATTACHED DEVIATION



ENGINEERING ORDER # TEO17-631

SCALE: NTS

SHEET 1 OF 1

DRAWING NO. RBW7105G00131-3G REV: ~~N/C~~ 6.01 EFF.: NEXT ORDER

CHANGE CATEGORY

☐ MAJOR ☒ MINOR

DATE 17.09.05

TITLE: ENGINE TRANSPORT STAND

APPROVED: VM 09/12/2017 QA APP.: PD 09/08/2017 MFG. APPR.: DP 09/07/2017

CHECKED: SAC 09/06/2017 DRAWN: VM 09/06/2017

TRANSACTION CODE (TC):
A-ADD C-CREATE
R-REVISE D-DELETE

REASON: MATERIAL SPEC MISSING

COPYRIGHT © 2017 BY DART AEROSPACE LTD
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE
USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION
FROM DART AEROSPACE LTD.

WAS : ITEM # -05, -07, -09, -21, -23, -31, -33 MATERIAL : STEEL SQ. TUBE

IS : ITEM # -05, -07, -09, -21, -23, -31, -33 MATERIAL : A500 TUBING

DOCUMENTS EFFECTED: ☐ PATTERN ☐ INSTALL INSTRUCTIONS ☒ BOM

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No <u>RBW7105G00131-3G REV. 6</u> NCR No. _____		DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="width:12.5%;">Skid-tube <input type="checkbox"/></td> <td style="width:12.5%;">Cross tube <input type="checkbox"/></td> <td style="width:12.5%;">Water Jet <input type="checkbox"/></td> <td style="width:12.5%;">Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>						Skid-tube <input type="checkbox"/>	Cross tube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																																																																																																																													
Skid-tube <input type="checkbox"/>	Cross tube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>																																																																																																																																																		
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>																																																																																																																																																		
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>																																																																																																																																																		
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																																																																																																																																																			
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval OCT 3, 2018																																																																																																																																														
Description Work Order Deviation				Disposition				Completed By																																																																																																																																													
ITEM -63 WAS BASSICK#CAS50156YZ-HDR51 IS MCMASTER#30305T552 ITEM -65 WAS BASSICK#CAS50156YZ-HDR51 IS MCMASTER#30305T65 PER KPT				- THIS DEVIATION IS ACCEPTABLE. - THE FIT, FORM AND FUNCTION OF THE PART WILL BE AS ORIGINALLY INTENDED -HOLE SPACING ON ITEM -17 CAN BE ADJUSTED ACCORDING TO CASTER HOLE SPACING				Lead hand / Supervisor Approval Verification																																																																																																																																													
								QC / QA Coordinator Approval																																																																																																																																													
Root Cause				FAULT CATEGORY																																																																																																																																																	
<table style="width:100%; border: none;"> <tr><td style="width:10%;">Environment</td><td><input type="checkbox"/></td><td style="width:10%;"></td><td style="width:10%;"></td><td style="width:10%;">No Re-verification</td></tr> <tr><td>Design</td><td><input type="checkbox"/></td><td></td><td></td><td>Operator</td></tr> <tr><td>Doc/Data</td><td><input type="checkbox"/></td><td></td><td></td><td>Offset/Setup</td></tr> <tr><td>Equip/Tooling</td><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td></td><td>Supplier</td></tr> <tr><td>Handling/Pre</td><td><input type="checkbox"/></td><td></td><td></td><td>Training</td></tr> <tr><td>Material</td><td><input type="checkbox"/></td><td></td><td></td><td>Use for Testing</td></tr> <tr><td>Internal Transport</td><td><input type="checkbox"/></td><td></td><td></td><td>Poor Information</td></tr> <tr><td>Tribal Knowledge</td><td><input type="checkbox"/></td><td></td><td></td><td>Rushing</td></tr> <tr><td>LOA</td><td><input type="checkbox"/></td><td></td><td></td><td>Product Improvement</td></tr> <tr><td>Substation</td><td><input type="checkbox"/></td><td></td><td></td><td>Process Improvement</td></tr> <tr><td>Past Expiry Date</td><td><input type="checkbox"/></td><td></td><td></td><td>Manufacturing Process</td></tr> <tr><td>Misidentified</td><td><input type="checkbox"/></td><td></td><td></td><td>Past Due</td></tr> </table>				Environment	<input type="checkbox"/>			No Re-verification	Design	<input type="checkbox"/>			Operator	Doc/Data	<input type="checkbox"/>			Offset/Setup	Equip/Tooling	<input type="checkbox"/>	<input checked="" type="checkbox"/>		Supplier	Handling/Pre	<input type="checkbox"/>			Training	Material	<input type="checkbox"/>			Use for Testing	Internal Transport	<input type="checkbox"/>			Poor Information	Tribal Knowledge	<input type="checkbox"/>			Rushing	LOA	<input type="checkbox"/>			Product Improvement	Substation	<input type="checkbox"/>			Process Improvement	Past Expiry Date	<input type="checkbox"/>			Manufacturing Process	Misidentified	<input type="checkbox"/>			Past Due	<table style="width:100%; border: none;"> <tr><td style="width:15%;">Pressure/Forced</td><td><input type="checkbox"/></td><td style="width:15%;">Temperature/Cure</td><td><input type="checkbox"/></td><td style="width:15%;">Power Loss/Surge</td><td><input type="checkbox"/></td><td style="width:15%;">Positioned Wrong</td><td><input type="checkbox"/></td></tr> <tr><td>Bending</td><td><input type="checkbox"/></td><td>Set-up</td><td><input type="checkbox"/></td><td>Folio/Program</td><td><input type="checkbox"/></td><td>Outside Dimensions</td><td><input type="checkbox"/></td></tr> <tr><td>Centre Not Concentric</td><td><input type="checkbox"/></td><td>BOM/Route</td><td><input type="checkbox"/></td><td>Grain</td><td><input type="checkbox"/></td><td>Over/Under tolerance</td><td><input type="checkbox"/></td></tr> <tr><td>Cracks</td><td><input type="checkbox"/></td><td>Broken/Damage/Defect</td><td><input type="checkbox"/></td><td>Weld</td><td><input type="checkbox"/></td><td>Part Incorrect</td><td><input type="checkbox"/></td></tr> <tr><td>Crimp/Kink/Ripple/Wave</td><td><input type="checkbox"/></td><td>Inspection Incomplete/Unqualified</td><td><input type="checkbox"/></td><td>Wrong Stock Pulled</td><td><input type="checkbox"/></td><td>Part Lost/Missing</td><td><input type="checkbox"/></td></tr> <tr><td>Cuffs</td><td><input type="checkbox"/></td><td>Contamination</td><td><input type="checkbox"/></td><td>Out of Sequence</td><td><input type="checkbox"/></td><td>Part Moved</td><td><input type="checkbox"/></td></tr> <tr><td>Crushing</td><td><input type="checkbox"/></td><td>Countersink</td><td><input type="checkbox"/></td><td>Off-set</td><td><input type="checkbox"/></td><td>Drawing</td><td><input type="checkbox"/></td></tr> <tr><td>Heat Treat</td><td><input type="checkbox"/></td><td>Cut Too Short</td><td><input type="checkbox"/></td><td>Mislabeled</td><td><input type="checkbox"/></td><td>Finish</td><td><input type="checkbox"/></td></tr> <tr><td>Wave/Twist in Tube</td><td><input type="checkbox"/></td><td>Instructions Incomplete/Unclear</td><td><input type="checkbox"/></td><td>Fit/Function</td><td><input type="checkbox"/></td><td>Misread</td><td><input type="checkbox"/></td></tr> <tr><td>Marks/Chatter</td><td><input type="checkbox"/></td><td>Drill Holes</td><td><input type="checkbox"/></td><td>Misaligned/off center</td><td><input type="checkbox"/></td><td>Turning Sequence</td><td><input type="checkbox"/></td></tr> </table>						Pressure/Forced	<input type="checkbox"/>	Temperature/Cure	<input type="checkbox"/>	Power Loss/Surge	<input type="checkbox"/>	Positioned Wrong	<input type="checkbox"/>	Bending	<input type="checkbox"/>	Set-up	<input type="checkbox"/>	Folio/Program	<input type="checkbox"/>	Outside Dimensions	<input type="checkbox"/>	Centre Not Concentric	<input type="checkbox"/>	BOM/Route	<input type="checkbox"/>	Grain	<input type="checkbox"/>	Over/Under tolerance	<input type="checkbox"/>	Cracks	<input type="checkbox"/>	Broken/Damage/Defect	<input type="checkbox"/>	Weld	<input type="checkbox"/>	Part Incorrect	<input type="checkbox"/>	Crimp/Kink/Ripple/Wave	<input type="checkbox"/>	Inspection Incomplete/Unqualified	<input type="checkbox"/>	Wrong Stock Pulled	<input type="checkbox"/>	Part Lost/Missing	<input type="checkbox"/>	Cuffs	<input type="checkbox"/>	Contamination	<input type="checkbox"/>	Out of Sequence	<input type="checkbox"/>	Part Moved	<input type="checkbox"/>	Crushing	<input type="checkbox"/>	Countersink	<input type="checkbox"/>	Off-set	<input type="checkbox"/>	Drawing	<input type="checkbox"/>	Heat Treat	<input type="checkbox"/>	Cut Too Short	<input type="checkbox"/>	Mislabeled	<input type="checkbox"/>	Finish	<input type="checkbox"/>	Wave/Twist in Tube	<input type="checkbox"/>	Instructions Incomplete/Unclear	<input type="checkbox"/>	Fit/Function	<input type="checkbox"/>	Misread	<input type="checkbox"/>	Marks/Chatter	<input type="checkbox"/>	Drill Holes	<input type="checkbox"/>	Misaligned/off center	<input type="checkbox"/>	Turning Sequence	<input type="checkbox"/>
Environment	<input type="checkbox"/>			No Re-verification																																																																																																																																																	
Design	<input type="checkbox"/>			Operator																																																																																																																																																	
Doc/Data	<input type="checkbox"/>			Offset/Setup																																																																																																																																																	
Equip/Tooling	<input type="checkbox"/>	<input checked="" type="checkbox"/>		Supplier																																																																																																																																																	
Handling/Pre	<input type="checkbox"/>			Training																																																																																																																																																	
Material	<input type="checkbox"/>			Use for Testing																																																																																																																																																	
Internal Transport	<input type="checkbox"/>			Poor Information																																																																																																																																																	
Tribal Knowledge	<input type="checkbox"/>			Rushing																																																																																																																																																	
LOA	<input type="checkbox"/>			Product Improvement																																																																																																																																																	
Substation	<input type="checkbox"/>			Process Improvement																																																																																																																																																	
Past Expiry Date	<input type="checkbox"/>			Manufacturing Process																																																																																																																																																	
Misidentified	<input type="checkbox"/>			Past Due																																																																																																																																																	
Pressure/Forced	<input type="checkbox"/>	Temperature/Cure	<input type="checkbox"/>	Power Loss/Surge	<input type="checkbox"/>	Positioned Wrong	<input type="checkbox"/>																																																																																																																																														
Bending	<input type="checkbox"/>	Set-up	<input type="checkbox"/>	Folio/Program	<input type="checkbox"/>	Outside Dimensions	<input type="checkbox"/>																																																																																																																																														
Centre Not Concentric	<input type="checkbox"/>	BOM/Route	<input type="checkbox"/>	Grain	<input type="checkbox"/>	Over/Under tolerance	<input type="checkbox"/>																																																																																																																																														
Cracks	<input type="checkbox"/>	Broken/Damage/Defect	<input type="checkbox"/>	Weld	<input type="checkbox"/>	Part Incorrect	<input type="checkbox"/>																																																																																																																																														
Crimp/Kink/Ripple/Wave	<input type="checkbox"/>	Inspection Incomplete/Unqualified	<input type="checkbox"/>	Wrong Stock Pulled	<input type="checkbox"/>	Part Lost/Missing	<input type="checkbox"/>																																																																																																																																														
Cuffs	<input type="checkbox"/>	Contamination	<input type="checkbox"/>	Out of Sequence	<input type="checkbox"/>	Part Moved	<input type="checkbox"/>																																																																																																																																														
Crushing	<input type="checkbox"/>	Countersink	<input type="checkbox"/>	Off-set	<input type="checkbox"/>	Drawing	<input type="checkbox"/>																																																																																																																																														
Heat Treat	<input type="checkbox"/>	Cut Too Short	<input type="checkbox"/>	Mislabeled	<input type="checkbox"/>	Finish	<input type="checkbox"/>																																																																																																																																														
Wave/Twist in Tube	<input type="checkbox"/>	Instructions Incomplete/Unclear	<input type="checkbox"/>	Fit/Function	<input type="checkbox"/>	Misread	<input type="checkbox"/>																																																																																																																																														
Marks/Chatter	<input type="checkbox"/>	Drill Holes	<input type="checkbox"/>	Misaligned/off center	<input type="checkbox"/>	Turning Sequence	<input type="checkbox"/>																																																																																																																																														
OTHER : _____																																																																																																																																																					